SCHOOL ADMINISTRATIVE AND SUPERVISORY ORGANIZATIONS IN CITIES OF 20,000 TO 50,000 POPULATION

By

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W. C. M.

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SCHOOL ADMINISTRATIVE AND SUPERVISORY ORGANIZATIONS IN CITIES OF 20,000 TO 50,000 POPULATION

CHAPTER I

THE PROBLEM

The problem has many phases:

A. What administrative organization set-ups are necessary to provide the educational offerings demanded by sound principles of public education?

B. What is the present practice in Massachusetts cities in regard to the following:
 a. Administrative organization.
 b. The number and kind of positions in the administrative organizations.
 c. The number of employees in those positions.
 d. How the administrative organizations relate themselves to the providing of the educational offerings demanded by sound principles of public school education.
 e. Change in organization.

C. What is the present practice in a number of selected cities having progressive school systems in regard to the following:
 a. Administrative organizations.
 b. The number and kind of positions in the administrative organizations.
 c. The number of employees in those positions.
 d. How the administrative organizations relate themselves to the providing of the educational offerings demanded by sound principles of public school education.
 e. Change in organization.

D. What is the present practice in cities of 20,000 to 50,000 population throughout the United States in regard to *a*, *b*, and *c*, as stated in B?

School administrators and teachers of educational administration and supervision have long been faced with the problem

of what constitutes an adequate administrative and supervisory organization for a city school system. This study was undertaken as the result of an attempt by the writer to discover whether reliable standards can be set up by which school administrators can determine the number and kind of positions there should be in the administrative and supervisory organization of a city school system, and the number of employees there should be in those positions.

The result of the preliminary study was the establishment of the fact that it is not possible to set up reliable standards for administrative and supervisory organizations in the matter of the number and kind of positions and the number of employees there should be in those positions, either for cities within a narrow range of population, or for cities of approximately the same public school membership. An adequate administrative and supervisory organization set up for a particular city, regardless of size, cannot be determined without a consideration of the educational offerings of the public schools of that city. In the preliminary study, it seemed that the educational needs of a city ought to determine the administrative and supervisory organization. It was found, however, that in many cities there is a wide gap between the educational needs and the educational offerings. Among the educational needs of a city may be the provision for sight saving classes, for the education of crippled children, and for the education of delinquent and neurotic children. Unless and until the board of education includes these educational needs among the educational offerings, there is no justification in providing for them in the administrative and supervisory organization.

It does not follow from the foregoing that the educational offerings of a city school system do determine the administrative and supervisory organizations of that city. In every survey of a city school system that has been made during the past fifteen years, it has been found that the administrative and supervisory organization was inadequate for properly caring for the educational offerings of the school system surveyed.

The Origin of the Problem

The origin of the problem which is the subject of the present study is found in the preliminary study and in a consideration of the facts given on page 3.

a. Some city school systems have advanced far in providing the educational offerings demanded by sound principles of public school education;

b. They have advanced by making use of the great body of knowledge of educational administration and techniques of procedure that has resulted from a vast amount of careful investigation and scientific experimentation in the field of public school education during the last fifteen years;

c. Other cities have not made use of this knowledge, and, consequently, have not progressed so far, but educationally are about where the more progressive school systems were ten or fifteen years ago.

The Purpose of the Study

At present, city superintendents have to depend upon subjective reasoning and the power of persuasion in presenting to the board of education the need for an adequate administrative and supervisory organization. Educational surveys show a tendency in practice that restricts the efficiency of school administration by failure of boards of education to provide the superintendent of schools with a sufficient variety and number of assistants with clearly defined duties so as to relieve the superintendent of administrative details. Surveys show also that the lack of an adequate organization results in failure to attain the quality and quantity of educational outcomes which should accrue from present educational offerings.

Sources of Data

Data have been obtained from by-laws, or handbooks of boards of education, school reports, personnel studies, minute books, general school department files, research data, school surveys, books, periodicals, university publications, masters' and doctors' theses, and returns from questionnaires.

Method of Securing Data

1. *Reading.*

2. *The questionnaire.*

3. *Field work.* The investigator selected twenty-two cities in Massachusetts for field work. This consisted of obtaining first-hand informational data of present practice in those cities,

through personal interviews with the superintendents. The investigator also examined and obtained data from school board records and the personnel accounting systems in those cities. A small number of educationally progressive cities were selected for field work. A large amount of data pertaining to the administrative and supervisory organizations of cities of a population range of 20,000 to 50,000 was obtained by the investigator by personal visits to the office of the Director of Research of the National Education Association and the office of the Director of Research of the United States Bureau of Education. One hundred sixty-three superintendents furnished data directly from their city school systems.

The methods of treatment of the data in this study are the descriptive, the historical, the statistical, and the analytical methods. The study as a whole is analytical.

Measurements

So far as possible, objective methods will be used in this study. These will be supplemented by authentic findings of other investigators in the fields of school administration and supervision where the findings have a direct bearing on the solution of this problem. The first criterion that is applied is, "What is the work that the educational needs of a city school system require to be done by the administrative and supervisory organization?" In setting up this particular criterion, educational standards that have hitherto been determined through research, by means of school surveys, and through the judgments of recognized authorities will be used.

In the case of some particular division or unit of organization the findings of previous research workers will be accepted and adopted as criteria. When the investigation requires that decisions in evaluation must be made in regard to matters affecting the solution of this problem, and there are no objective measurements in existence, then the investigator will accept and use the beliefs and judgments of protagonists as criteria. The consensus of opinion of authorities must be used in cases in which there are no satisfactory measurements. In following this plan, there is nothing inconsistent with the principles of scientific inquiry. "Authority, when founded upon tested knowledge rather than upon pure opinion, has an essential function in the scheme of

life and education."[1] A further sound reason for adopting this method of procedure in this investigation is found in the fact that one of the important duties of the superintendent of schools is to interpret for his board of education, his administrative and instructional staff, and his community not only the advancement in public education in theory and practice as a result of scientific investigation, but also the consensus of opinion of recognized educational authorities.

The purpose of the study is to provide superintendents of schools with administrative and supervisory set-ups which are being used by city school systems that are providing the educational offerings and making use of the body of knowledge referred to under "The Origin of the Problem."

[1] McCall, W. A., *How to Experiment in Education*. The Macmillan Company, 1926, p. 2.

CHAPTER II

HISTORICAL INTRODUCTION

Information obtained from textbooks and articles on public school administration shows that the whole plan for the administrative organization of a city school system is a product of haphazard growth. The literature of school surveys further demonstrates the fact that the existing types of administrative organization are the results of the rapid growth of public school systems, and that they have been developed and adopted without the application or guidance of fixed principles or standards. The wide variety of practice shows that whatever changes have taken place in individual school systems or in particular sections of the country have occurred with little or no reference to what improvement in practice has been made in other places. The data obtained by the investigator by personal visits to 22 cities, and which are shown in Table 3, furnish additional incontrovertible evidence to prove that there is a wide variety of organization, that the kind and number of the superintendents' administrative staff cover a wide range, that there is little agreement as to the work that should be performed by the individual members of the organization, and that what the superintendent himself does is not determined by any fixed set of principles.

It is not surprising that these things are so, because the history of American public education shows that the office of superintendent of schools represents an evolution. In the theory of educational administration, sound principles have been established which determine what the powers, duties, and functions of the board of education should be, and what the powers, duties, and functions of the superintendent of schools should be. It is true that educational theory runs somewhat ahead of educational practice, and this is as it should be. Unless theory runs ahead of practice and prepares the way for better practice, there is no progress. This is no less true of government, law, medicine, and religion than of public school administration. To complain,

"That (any particular principle) is all right in theory, but it doesn't square with practice," is no more reasonable than to complain that, although in theory honest people are the better citizens, many citizens are dishonest. The best practice always represents good theory because theory is knowledge based on tested experience. Theory is the consensus of opinion based on tested knowledge, and theory is the truth which has been demonstrated through investigation and scientific experimentation.

Evolution of American Public School Administration

The Office of the Superintendent of Schools

The office of the superintendent of schools represents an evolution. In the early days of the district system of New England, it was customary for the school committee (sometimes called school directors, and still so designated in some of the New England States) to elect one of their members chairman and another clerk or secretary.

The secretary kept the records of the meetings, and, in some instances, authority to purchase certain things such as wood for fuel, lumber for furniture, etc., was delegated to him by the committee. In many school districts the clerk or secretary, even in the first half of the nineteenth century, was, to a considerable extent, the executive officer of the school committee. In other districts certain executive functions were delegated to the chairmen of the committees.

The duties and powers of the school committee in those early days were limited in scope because the public school system was in its infancy. There were no free textbooks and supplies. There was no furniture except that made in the shop of the local carpenter, or made by him or by the school committee themselves from lumber bought and delivered at the schoolhouse of the district. The school teacher was hired by the committee, and, in many of the rural districts, there was only one schoolhouse and only one teacher. It was the duty of the school committee, usually performed by the chairman or the secretary, to arrange for boarding places for the teacher, who "boarded around" among the homes of the pupils. This custom of "boarding the teachers around" was without expense to the teacher or to the district. The school committee visited the schools for purposes

of inspection and to "examine the pupils." They also held teachers' examinations.

By the middle of the nineteenth century, the New England district system gave way to the town system of schools and the several districts of a town became merged in the town system. About 1890 the system of free textbooks was adopted. At once the office of school committee took on added responsibility, and more duties were delegated to the secretary. Records of school committee meetings were longer and contained more items of business procedure. The correspondence increased in volume. In some instances, the secretary was paid a small amount for his services. Later the head teacher or principal in the larger towns was made secretary of the committee and to him were delegated some of the functions of the school committee, such as examining textbooks, visiting the schools, supervising the janitor work, or doing it himself in some cases.

By a gradual process the head teacher not only became the secretary of the school committee and its executive officer, but also, in many of the towns, finally became the superintendent of schools. But there was no clear-cut distinction between executive functions and legislative functions. The board of education (the school committee in New England) continued to perform executive functions, and continued to engage in the supervision of instruction in some school systems. Even to this day, educational administrative practice shows, in many cases, a failure on the part of boards of education to recognize the distinction between the legislative function of the board and the executive function of the superintendent.

The evolutionary process by which the head teacher became superintendent of schools, secretary of the board of education, and chief executive officer has by no means been universal. In many cases during the early days of public school administration, the secretary of the board of education continued to be selected from the board membership, and to him, as well as to the chairman, were delegated many of the executive duties of administration and supervision. In school systems where the development of early administration was along this line, the head teacher later became the superintendent of schools, but the board of education continued to perform both the legislative function and the executive function. In some school systems of this type,

the duty of carrying out the business policies of the board of education was delegated to a salaried secretary, who in the early days was a board member but in a later development was a non-board member, but not the superintendent of schools. Some districts have a secretary and a business manager.

A third type of development of educational administration is found in the rather early recognition of the sound principle that the function of the board of education is legislative and that its most important duty is to select a superintendent of schools as its chief executive officer, who is responsible to the board for the administration of all the policies of the board. In this type of organization, the superintendent of schools is vested with authority and held responsible for executing the business policies as well as the educational policies of the board of education.

Thus, it is found that the development of public school administration in American cities has resulted in three rather distinct types of administrative organization existing to-day:

1. The organization in which the superintendent of schools is the only designated executive officer of the board of education, but in which the executive function is not clearly defined in relation to the legislative function. In this type of organization the board of education itself exercises the executive function, sometimes directly but more frequently through a system of committees. For instance, a committee on teachers interviews candidates, determines their qualifications, and, in some instances, presents recommendations or nominations to the board of education.

2. The organization in which there are two, and sometimes more than two, executive officers who are independent of each other and directly responsible to the board of education. In this type of organization there is usually a business agent or a manager of business affairs, who is not responsible to the superintendent of schools. This kind of organization may or may not have a board of education which exercises the executive function. Data compiled by the United States Bureau of Education show that this type of organization is almost entirely limited to the large cities.

3. The organization in which the legislative function and the executive function are clearly defined, and in which the executive

function is vested in the superintendent of schools as the chief executive officer of the board of education.

The statements in Chapter I concerning "The Problem" and "The Purpose of the Study" show that the investigator is concerned with the administrative and supervisory organizations of city school systems. This investigation deals with the status of the administrative organization of the board of education itself and with the status of the superintendent of schools only in so far as they affect the administrative and supervisory organizations of city school systems. For purposes of this study, the administrative and supervisory organization of a city school system is defined as the administrative and supervisory organization of the executive officer of the board of education and his assistants, as approved by the board of education, for the purpose of administering the policies of the board of education.

Previous Studies in This Field

In 1913 [1] Arthur H. Chamberlain published an historical study entitled *The Growth of Responsibility and Enlargement of Power of the City School Superintendent.* Mr. Chamberlain traced the origin and development of the city superintendent's power. He found that the history of the city superintendency began in 1837. He presents evidence to indicate that education is a function of the state. He presents arguments and considerable evidence that the superintendent from the beginning has been an educational leader, that a proper relationship must be established between the superintendent and the board of education, and that responsibility must be definitely fixed. In the chapter on conclusions, the council form of organization composed of supervisors and representatives of elementary and secondary teachers is outlined.

In 1917 [2] Dr. William W. Theisen published his study entitled *The City Superintendent and the Board of Education.* Dr. Theisen's principal conclusions and recommendations are:

1. That a board of education should endeavor to discover its own proper duties and those that should be delegated to professional executive officers.

[1] Chamberlain, A. H., *The Growth of Responsibility and Enlargement of Power of the City School Superintendent.* University of California Press, Berkeley, California, 1913.

[2] Theisen, W. W., *The City Superintendent and the Board of Education.* Bureau of Publications, Teachers College, Columbia University, New York, 1917.

2. That its own function is first of all: (a) to choose a professionally trained chief executive, centralize authority and responsibility for results in him, and expect him to initiate all policies. (b) To debate such proposed policies with him in the light of definite objective evidence and to provide the legislation necessary to secure efficient results.

3. That a board of education need wait for no precedent to adopt a form of administrative organization in which the professional superintendent is made the administrative leader and chief executive of the system, and in which the board itself serves in an advisory and legislative capacity and acts only through its chief executive.

In 1922[3] Dr. John Cayce Morrison published his study entitled *The Legal Status of the Superintendent of Schools.* The summation of Dr. Morrison's findings is:

(*a*) Responsibility for local administration of schools was first vested in municipal or civil officers who had been chosen primarily for the performance of other duties.

(*b*) Gradually, as schools developed, responsibility for direction and supervision of instructional activities was vested in officials whose sole public responsibility was limited to the schools.

(*c*) These lay boards were given power to delegate their responsibility to small committees or to a committee of *one.*

(*d*) This one official developed into the professionally trained executive known in every state as the city school superintendent.

(*e*) As society adds more and more responsibility to the public school system, the need for better trained and more responsible administrative leadership of schools is recognized.

(*f*) This responsible leadership should extend to all phases of school activity. All dual responsibility should be eliminated.

(*g*) The laws governing school administration should be formulated to build up this responsible leadership and to safeguard the public interest.

In 1923[4] Dr. F. V. Bermejo published his study entitled *The School Attendance Service in American Cities.* Some of the important findings of Dr. Bermejo are:

The median number of pupils in annual enrollment per attendance officer is 3.758 for all cities reporting. From the standpoint of adequacy *in number* alone, these figures meet satisfactorily the standard pointed out by Engelhardt and Evenden.

Rightly understood, the work of the attendance officer is mostly social. Proper child accounting demands that the activities of the attendance service be extended to include *all* children, regardless of school attended.

[3] Morrison, J. C., *The Legal Status of the City Superintendent of Schools.* Warwick and York, Baltimore, Maryland, 1922.

[4] Bermejo, F. V., *The School Attendance Service in American Cities.* George Banta Publishing Company, Menosha, Wisconsin.

A permanent, continuing school census should supplant all other forms of school census in all cities where it is not in vogue.

All transactions connected with the certification of school children for employment should be placed in the hands of the attendance officer, or department.

In 1923 [5] Dr. Bennett C. Douglass published his study entitled *The Status of the Superintendent.* Some of Dr. Douglass' findings and conclusions are:

(*a*) All the educational activities of the city should be centered in the office of the superintendent of schools. (*b*) The administrative work of the superintendent should be based upon principles of business administration. Certain authorities should be delegated to competent subordinates. (*c*) The superintendent should have power to initiate and execute the appointments of assistant superintendents, business managers, principals, teachers, and all other employees whose work is vital in the development of an educational program. (*d*) The budget should be prepared under the direction of the superintendent. (*e*) The superintendent should have power to initiate new policies and to make rules and regulations governing routine matters. (*f*) Supervision of instruction should be carried on through supervisors and principals under the leadership of the superintendent. . . . (*i*) Authorities having to do with buildings and grounds should center in the office of the superintendent of schools, or in the office of an official who is responsible to the superintendent.

In 1926 [6] Dr. Frederick Earle Emmons published his study entitled *City School Attendance Service.* Some of Dr. Emmons' conclusions are:

The public school attendance service is incomplete and often lacking entirely for non-public schools.

The clerical assistance is insufficient and often entirely lacking.

Dr. Emmons finds that enrollment is not the proper basis for determining the number of attendance officers, but that their number should be determined on the basis of the total number of pupils of school age as disclosed by an adequate continuous census. He commends the Philadelphia plan of one attendance officer for 2,500 to 4,000 children, and the [7] Engelhardt-Evenden standard of one attendance officer and one clerk for 6,000 children.

[5] Douglass, B. C., *The Status of the Superintendent.* Department of Superintendence, National Education Association, Washington, D. C., 1923.

[6] Emmons, F. E., *City School Attendance Service.* Bureau of Publications, Teachers College, Columbia University, New York, 1926.

[7] Engelhardt, N. L. and Evenden, E. S., *The Atlanta School Survey.* Bureau of Publications, Teachers College, Columbia University, New York.

In 1926[8] Dr. Hans C. Olsen published his study entitled *The Work of Boards of Education.* In summation Dr. Olsen accepts the findings of previous studies that the work of boards of education is threefold:

> (1) To select the superintendent of schools; (2) to determine the policies of the school system; (3) to see to it that these policies are carried out by the superintendent of schools and his assistants.

Dr. Olsen shows that the proper work of the board of education is legislative and that administrative work should be delegated to the superintendent and his assistants.

In 1928[9] Dr. Chien-Hsun Li published his study entitled *Some Phases of Popular Control of Education in the United States.* Dr. Li's study is a historical, descriptive, and analytical treatment of the state boards of education and of the chief executive officer of the state educational systems with particular reference to form of organization, powers, and duties.

In the field of public school administration, in addition to the studies already mentioned, there have been some studies of certain phases of administration which have some bearing upon the subject of this study. Among them are: Frasier, G. W., *The Control of City School Finance;*[10] McGaughy, J. R., *Fiscal Administration of City School Systems;*[11] Mort, Paul R., *State Support of Public Schools;*[12] Morehart, G. C., *The Legal Status of City School Boards;*[12] Tai, S. C., *Objective Measures Used in Determining the Efficiency of the Administration of Schools.*[13]

On the whole, there is very little literature on the subject of administrative and supervisory organizations of city school systems which is based on scientific study or analytical investigation. The most important contributions in this field are found in the reports of city school surveys made by the Institute of Educational Research, Division of Field Studies, Teachers College, Columbia University, Dr. George D. Strayer, Director.

In these reports are found studies of the educational offerings

[8] Olsen, Hans C., *The Work of Boards of Education.* Bureau of Publications, Teachers College, Columbia University, New York.

[9] Li, Chien-Hsun, *Some Phases of Popular Control of Education in the United States.* The Commercial Press, Shanghai, China, 1928.

[10] Bruce Publishing Company, Milwaukee, Wisconsin.

[11] The Macmillan Company, New York.

[12] Published by Bureau of Publications, Teachers College, Columbia University, New York City.

[13] Published by the author.

of the communities studied, analytical investigations of the educational needs of the communities, scientific evaluations of how the administrative and supervisory organizations are performing their functions, and recommendations as to what the educational offerings should be in the light of educational needs, and also what the administrative and supervisory organizations should be in order to provide the cities with adequate and efficient educational service.

CHAPTER III

THE ADMINISTRATIVE ORGANIZATION OF CITY SCHOOL SYSTEMS

The board of education of a city school system is a legislative body. In general the work of the board of education should be: [1]

1. To understand its legal status.
2. To make itself familiar with the development of the school system, the ideals and policies which have been followed hitherto.
3. To determine its own functions and those of its professional staff.
4. To elect a superintendent of schools.
5. To elect members of the professional staff and school employees on the recommendation of the superintendent.
6. To study financial problems and adopt a budget.
7. To award contracts and authorize payments.
8. To consider reports submitted by the superintendent upon conditions, results, and needs of the schools.
9. To consider and adopt policies for the guidance of the professional staff.
10. To consider and act upon recommendations made by the superintendent which are not provided for in the policies already adopted.
11. To consider and adopt a program for the future development of the schools.
12. To consider and act upon the several steps in the program in advance of their need.
13. To interpret the point of view of citizens to the professional staff.
14. To interpret the educator's point of view to the people.

[1] Strayer, G. D. and Engelhardt, N. L., *Report of the Survey of the Schools of Beaumont, Texas*, 1927. Bureau of Publications, Teachers College, Columbia University, New York, 1927.

As stated in Chapter II, present practice shows the existence of three somewhat distinct types of organization for the administration of the public school systems:

TYPES OF ORGANIZATION

1. *Uncoordinated type.* The organization in which there is only one executive officer, the superintendent of schools, but in which executive functions are performed by the board of education through committees, or through the chairman, or secretary, who are board members. In this form of organization the board sometimes exercises executive functions as a body, in board meetings.

2. *Multiple type.* The organization in which there are two or more executive officers, each directly responsible to the board of education. In this type of organization the board may or may not perform executive functions.

3. *Unit type.* The organization in which there is one executive officer, the superintendent of schools, in whom is vested the management of the school system, and in which the board of education has determined that its functions are legislative.

Previous investigators have reported two distinct types of organization. Theisen [2] reports as follows:

(1) *Centralized or coordinated.* In which the heads of all departments are subordinate to the superintendent as chief executive officer.

(2) *Divided or uncoordinated.* In this form of organization the superintendent is only one of several heads. Between these two types is a group of cities whose organization is centralized in certain respects and divided or decentralized in others.

Smith says: [3]

The *unit* type of city is one in which the administration of a city school system is vested in one chief executive officer known as the superintendent of schools. The multiple type of city is one in which the administration of a city school system is vested in two or more coordinate executive officers each responsible directly to the board of education.

To recognize only two distinct types of organization is to ignore, for classification purposes, the very large number of city school systems in which the board of education itself performs

[2] Theisen, W. W., *The City Superintendent and the Board of Education.* Bureau of Publications, Teachers College, Columbia University, New York, 1917, p. 99.

[3] Smith, H. P., *The Business Administration of a City School System.* Bureau of Publications, Teachers College, Columbia University, New York, 1923, pp. 6-7.

a large part of the executive functions. The examination of the rules and regulations and the minute books of boards of education, which has been made by the present investigator, shows that in many city school systems the boards of education perform executive functions, and that the uncoordinated type of organization is a type distinct from the unit and multiple types.

Newburgh,[4] New York, is an example of type 1. The Rules and Regulations state, in regard to the committee on schools:

> It shall be the duty of this committee to examine all textbooks which may be proposed for use in the public schools and report thereon, setting forth the reasons for or against the introduction of such book or books.

Monessen, Pennsylvania, is an example of type 2. In Monessen there is a business agent or manager of business affairs who is directly responsible to the board of education and not to the superintendent of schools.

Revere, Massachusetts, is an example of type 3. In Massachusetts cities (Boston excepted), the superintendent of schools is, by state law, the chief executive officer of the school committee. In a considerable number of Massachusetts cities, however, the school committees (boards of education) perform executive functions through a system of standing committees, such as committee on repairs, committee on teachers, committee on textbooks and supplies, and several other committees. In Revere the only standing committee is a committee on repairs, and the rules and regulations of the school committee define the functions of the repair committee as advisory. All executive functions are performed by the superintendent of schools, acting for and under the authority of the school committee.

In the present study of school administrative organizations, we have found that there is a distinct type of organization of administrative control of city school systems which neither Theisen nor Smith have listed. This third type is the organization in which, in addition to the executive officers responsible to the board of education, there is one (or more than one) executive officer *not responsible to the board of education.* In this type of organization the administrative control of some part of the educational program is vested in an officer or board that is independent of the board of education.

[4] Since this was written, Newburgh has adopted the unit type of organization.

In Brookline, Massachusetts, the control of certain parts of the health program is vested in the board of health, and the control of the maintenance (repair) of school buildings is vested in the municipal building department.

In Revere, Massachusetts, the construction of new school buildings, after the plans and specifications and the sites have been approved by the school committee (board of education), is under the control of a building committee of five members appointed by the Mayor, "at least one of whom shall be a member of the school committee." In other cities the construction of new school buildings is under the control of the municipal buildings department.

It is clear that there are four types of administrative control:

1. The *unit* type, in which the administration of a city school system is vested in one chief executive officer, the superintendent of schools, who is directly responsible to the board of education.
2. The *multiple* type, in which the administration of a city school system is vested in two or more executive officers who are directly responsible to the board of education.
3. The *board of education—municipal department* type, in which the control of some part of the educational program is vested in a board or official not responsible to the board of education.
4. The *board of education committee* type.

Experience and the consensus of authority founded on tested knowledge lead to the conclusion that the unit type of organization is the best type of organization.

In one of the cities, included in this study, in which the construction of school buildings is not under the control of the board of education, a recently constructed four-room "type B" school building cost a little more than $116,000, and in another city included in this study, in which the construction of school buildings is not under the control of the board of education, a four-room "type B" schoolhouse cost approximately $150,000.

Summary and Conclusions

There are four types of administrative organizations in city school systems:

1. The *unit* type, in which there is one chief executive officer, the superintendent of schools, who is directly responsible to the board of education.

2. The *multiple* type, in which there are two or more executive officers directly responsible to the board of education.

3. The *board of education—municipal department* type, in which the control of some part or parts of the educational program is vested in a board or official *not* responsible to the board of education.

4. The *board of education committee* type, in which some phases of the executive work are done by the board of education through standing committees. Type number 4 is found to exist in practice even in some school systems in which type number 1 is the official organization.

Type number 1 is the best type of organization. It embodies all of the strength and advantages of sound business organization, and makes it more certain that the school system will be administered for educational purposes.

Type number 3 is the poorest form of organization. In it certain parts of the educational program are administered by those who do not have the educational viewpoint, and who, because they are not responsible to the board of education, are prone to subordinate the demands of educational needs to expediency.

The question of whether or not a city school system is fiscally independent has some influence on the type of administrative organization, but it has a greater influence on how the administration of the school system is carried on than on the organization itself. The matter of fiscal independence versus fiscal dependence will be treated in another chapter.

CHAPTER IV

THE WORK OF THE SCHOOL SYSTEM

The work to be performed by the administrative and supervisory organization of a city school system can be listed under the following headings:

1. Census and attendance.
2. Health education.
3. Instruction or the development of learning.
4. Supervision.
5. Business administration.

Census and Attendance

Most of the states require the taking of a school census every year.

The Massachusetts law is as follows:

Every child between seven and fourteen, every child under sixteen who does not meet the requirements for the completion of the sixth grade of the public schools of the town where he resides, and every child under sixteen except a child holding an employment certificate as provided in Chapter 149 and employed in some regular employment or business for at least six hours per day, and except a child having the written permission of the superintendent of schools of the town where he resides to engage in profitable employment at home, shall, subject to section fifteen, attend a public day school in said town or some other day school approved by the school committee, during the entire time the public schools are in session, unless the child attends school in another town, during the entire time the same is in session, under sections six to twelve, inclusive, or under Chapter 71; but such attendance shall not be required of a child whose physical or mental condition is such as to render attendance inexpedient or impracticable, or who is being otherwise instructed in a manner approved in advance by the superintendent or the school committee. The superintendent, or teachers in so far as authorized by him or by the school committee, may excuse cases of necessary absence for other causes not exceeding seven day sessions or fourteen half-day sessions in any period of six months. For the purposes of this section, school committees shall approve a private school only when the instruction in all the studies

required by law is in English, and when satisfied that such instruction equals in thoroughness and efficiency, and in the progress made therein, that in the public schools in the same town; but they shall not withhold such approval on account of religious teaching.

The school committee of each town shall provide for and enforce the school attendance of all children actually residing therein in accordance herewith.

The Texas law contains the following:

It shall be the duty of the census trustee to take between the first day of March and the first day of April, after his appointment, a census of all children that will be over seven and under eighteen years of age on the first day of the following September, and who are residents of the school district on said first day of April, and to make report under oath to the county superintendent on or before the first day of June next thereafter.

Present practice in the matter of attendance among the cities studied ranges from a permanent continuous census in a few cities to no school census in one city. In this latter city, which is a city in the state of New York, no school census has ever been taken.

The permanent and continuous census should contain provision for the following records:

1. Map of city.
2. Permanent census and family card.
3. Residence card (an alphabetical file).
4. Registration cards by school (alphabetical file).
 (a) Public schools.
 (b) Non-public schools.
5. Certificates for private instruction.
6. Weekly reports from individual schools showing
 (a) Transfers.
 (b) Changes of address.
 (c) Admissions.

Employment Papers

Because of the close relationship between school attendance and employment of minors, and because children of certain ages may be legally absent from school provided they possess working certificates and are actually employed, the whole matter of working certificates and employment records should be a part of

the work of the attendance department. Records that are required by law or are necessary can be listed as follows:

1. Promise of employment.
2. Physician's certificate of health.
3. School record.
4. Home employment permit (duplicate).
5. Employment certificate (duplicate).
6. Application for minor's license (street trades).
7. Birth certificate (or legal equivalent).
8. Employment summaries.
9. Daily record of certificates issued.

In many cities, and in practically all Massachusetts cities:

10. Record of parent's approval of employment.

In those cities in which there are continuation schools, the continuation schools are usually (always in Massachusetts) furnished the following:

1. Daily record of certificates issued.
2. Daily record of certificates used.

Health Education

An examination of almost any school will reveal defects of eyes, ears, nose, throat, lungs, heart, teeth, and nutrition.

Health work[1] in the public schools shows three well-defined stages of development. The first was medical inspection, and was merely for the purpose of detecting the presence of contagious disease. This was an extension of the work of the board of health into the schools. This work had its beginning in Boston in 1894, and was taken up by Chicago, 1895, New York City, 1897, and Philadelphia, 1898.

The second stage of development shows the inclusion of examination to discover non-contagious defects. As early as 1915 about 50 per cent of all American cities had adopted medical inspection which included the follow-up work of advising parents concerning the physical needs of their children.

The third stage is the stage of preventive health work and health instruction and the supervision of health instruction. From 50 to 80 per cent of school children have non-contagious physical defects, which tend to retard their school work. All children need instruction in personal hygiene in order that they may take proper care of their health. Health is, therefore, an educational problem.

[1] These four paragraphs on health are from Cubberley, E. P., *Public School Administration*. Houghton Mifflin Company, Boston, 1916, Chap. XX.

> Such a department (school health department) should be one of the principal departments of a city school system. The work represents a new technical field, requires expert direction, and the expertness of the department should be respected in its administration. Only to the superintendent of schools, as the coordinating head of the whole school organization, should the department be subject and responsible. Under the direction of this department should be the physicians, specialists, and nurses employed, and he should direct their work.

These statements by Cubberley have been accepted as sound principles of educational administration.

The work of health education can be shown in the following divisions:

1. Administration of the educational health department.
2. Pupils' health examination.
3. Health instruction.
 (a) The learning process.
 (b) Physical education and games.
4. Supervision of health instruction.
5. Follow-up work.

Instruction or Development of Learning and Supervision

The space limitations of this volume forbid an extended discussion of this topic. It may well be considered along with *supervision.* The purpose of public school education is to equip the individual to understand modern society and to adapt himself to it, to equip him to make a living and to live "the good life" for his own sake and for the sake of society. Educational offerings, educational opportunity, educational philosophy, and educational administration all have an effect on *what* instruction there shall be. Not all of them have an effect on what *kind* of instruction there shall be.

Development of learning is a better term than *instruction* for what should take place in the school. Whatever may be the objectives of a particular school or particular grade the most important thing that goes on is the learning process leading to desirable educational outcomes, or goals which are to be achieved through education.

The purpose of supervision in a narrow sense is the improvement of instruction. In a broader sense it is to insure a larger quantity of better quality educational outcomes. This can be

accomplished only by improving the learning process. The real purpose of supervision, therefore, is to improve the learning process.

The educational offerings demanded by sound principles of public education are those educational offerings which meet the needs of the community. The state sets up certain minimum requirements applicable to all school districts within the state, and to all school districts in which certain conditions exist. Massachusetts, for instance, requires that all towns and cities shall maintain elementary schools for at least 160 days in each school year. Massachusetts high schools shall be maintained for at least 180 days. Any city or town in Massachusetts in which two hundred or more boys and girls between fourteen and sixteen years of age are working under the authority of the Massachusetts child labor laws shall maintain one or more continuation schools. All of the states set up minimum requirements of what the educational offerings in the public schools shall be.

The objectives of public school education can be stated in terms of the cardinal principles [2]:

Health.
Command of fundamental processes.
Worthy home membership.
Vocation.
Citizenship.
Worthy use of time.
Ethical character.

The educational offerings provided by city school systems vary in detail to a considerable extent. They vary to a great extent in the quality and quantity of the different units. They do not vary to any great extent in the broad objectives, but they do vary greatly in the degree to which the objectives are achieved in different cities.

The educational offerings of all city school systems provide in some degree for health, command of fundamental processes, worthy home membership, citizenship, worthy use of time, and ethical character. The thoroughness and efficiency of the educational offerings under these various divisions represent a wide range.

[2] Epitomized from Cubberley, E. P., *State School Administration.* Houghton Mifflin Company, Boston, 1927, Chap. XII.

The fundamental theory of proper state requirements is that it is the business of the state to set standards; to fix by law the general minimum requirements that every community should meet; and to open the way by authorization and stimulation to communities to exceed the minimum.[3]

Business Administration

The work of the business administration of a city school system can be listed as follows:

Accounts—bookkeeping, cost accounting, and payrolls.
Records—minutes of board meetings and filing.
Maintenance and operation of buildings—repairs, renewals, and replacements.
Supplies—purchase, storage, and distribution as needed in school buildings.[4]

A more comprehensive consideration of the purpose of the business administration of a city school system makes it clear that the work of the business management, as given above, is too narrow and too restricted.

The business administration affects all of the educational activities of the whole school system. If it functions properly, it aids the instructional staff and the supervisory officers in producing a greater quantity of desirable educational outcomes in the school system. If it functions improperly, it limits the quantity and reduces the quality of the educational outcomes.

Efficient business administration of a city school system should provide for:

The establishment and acceptance of sound financial policies and programs.
The equitable distribution of the tax burdens.
The insurance of conformity to contractual obligations on the part of all persons dealing with the board of education.
The provision that all legal requirements are met in the transaction of business.
The recognition and adoption of financial procedures accepted as sound in the most advanced business circles.

[3] Epitomized from Cubberley, E. P., *State School Administration.* Houghton Mifflin Company, Boston, 1927. Chap. XII.

[4] Grill, E. W., "The Organization of the School Business Office," *Eleventh Proceedings,* National Association of Public School Business Officials, p. 36.

The anticipation of financial needs for the future educational program as developed by the educational staff.

The provision of a complete system of records which makes possible detailed publicity covering all moneys provided for the educational program.

The safeguarding of funds against misuse or loss.

The development of procedures which will assure proper care of all goods, equipment, and buildings provided by public funds.

The establishment of standards which will assure economy and efficiency in the construction of school buildings.

The anticipation of supply and repair needs and the satisfaction of those needs as they arise.

The development of a program of publicity which portrays facts concerning the school system and thereby establishes confidence in the school system on the part of the teachers.[5]

The detailed activities of business administration[6] may be classified as follows:

Activities which are primarily secretarial; namely, those that are performed by the secretarial staff of any corporation.

Activities which primarily involve financial accounting or transactions.

Activities which relate largely to the establishment of standards and the development of routines for the purchase of supplies, materials, and equipment for replacement.

Activities which are concerned largely with the maintenance and operation of plant.

Activities which involve the purchase of land, the acquisition of title, and the planning and construction of buildings.

Summary and Conclusions

The work to be performed by the administrative and supervisory organization of a school system in a city of 20,000 to 50,000 population is included under:

[5] Engelhardt, N. L. and Engelhardt, Fred, *Public School Business Administration*. Bureau of Publications, Teachers College, Columbia University, New York, 1927, pp. 35-36.

[6] Strayer, G. D., Engelhardt, N. L. and Others, *Problems in Educational Administration*. Bureau of Publications, Teachers College, Columbia University, New York, 1923, p. 201.

1. Census and attendance.
2. Health.
3. Instruction or development of learning.
4. Supervision.
5. Business administration.

CHAPTER V

THE SUPERINTENDENT OF SCHOOLS

The immediate consideration of this subject must of necessity have to do with present practice, and, to a considerable extent, with educational principles which are not new but are already established and sanctioned by authority.

The superintendent of schools is a professional school officer.[1] He should be the chief executive officer of the board of education, and as such he should be the general manager of the school system, acting under and by the authority of the board. The superintendent should be directly responsible to the board of education for the administration of all of the work of the school system. That the superintendent of schools must be the chief executive officer of the board of education is a definitely established principle of public school administration. A second principle of educational administration which of necessity goes along with the first is that the superintendent must have authority commensurate with his responsibility.

It is evident that if the superintendent of schools is to be responsible to the board of education (as he should be) for the educational outcomes of the school system, he must have authority to select and nominate the instructional and supervisory force. If he is to be responsible to the board for the custodial care and maintenance of the school property, he must have authority to select and nominate the custodial care and maintenance staff.

[1] Cubberley, E. P., *Public School Administration.* Houghton Mifflin Company, Boston, 1916. Chap. XII.

Engelhardt, N. L. and Engelhardt, Fred, *Public School Business Administration.* Bureau of Publications, Teachers College, Columbia University, New York, 1927, Chaps. I, II, and III.

Strayer, G. D., *Proceedings,* Department of Superintendence, National Education Association, Washington, D. C., pp. 165-66, 1925.

Strayer, G. D. and Engelhardt, N. L., *Report of the Survey of the Schools of Beaumont, Texas.* Bureau of Publications, Teachers College, Columbia University, New York, 1927.

Theisen, W. W., *The City Superintendent and the Board of Education.* Bureau of Publications, Teachers College, Columbia University, New York, 1917.

If he is to be responsible for the school health program,[2] he must have authority to select the health staff. In fact, if he is to be responsible to the board (as he should be) for the administration and supervision of the schools, it follows of necessity that he must have the responsibility and authority of a general manager of the school system.[3] The findings of numerous investigations and school surveys all point to the fact that efficiency and economy require that the responsibility for carrying out the policies of the board of education shall be placed in the hands of a single executive, the superintendent of schools, who shall have an adequate staff of competent assistants.

In Chapter II it was shown that the office of superintendent of schools represents an evolution. The superintendent of schools in the United States is clearly and legally recognized as an executive officer. In some cities he is the chief executive officer of the board of education. In other cities he is one of two or more executive officers. New York as a state provides by law [4] that the city superintendent of schools shall be the chief executive officer of the board of education in the following provisions:

Powers of the City Superintendent of Schools

The superintendent of schools of a city shall possess, subject to the by-laws of the board of education, the following powers and be charged with the following duties:

1. . . . to be the chief executive officer of such board (of education) and the educational system, and to have a seat in the board of education and the right to speak on all matters before the board but not the right to vote.

4. To have supervision and direction of associate, district, and other superintendents, directors, supervisors, principals, teachers, lecturers, medical inspectors, nurses, auditors, attendance officers, janitors, and other persons employed in the management of the schools or the other educational activities of the city authorized by this chapter and under the direction and management of the board of education.

[2] Cubberley, E. P., *Public School Administration*. Houghton Mifflin Company, Boston, 1916, Chap. XX.

[3] Strayer, G. D., *Proceedings*, Department of Superintendence, National Education Association, Washington, D. C., pp. 165-66, 1925.

[4] *New York Education Law* as amended to July 1, 1924, pp. 276-77.

Pennsylvania [5] legalizes the multiple type of organization:

Section 218. He (the secretary of the board of school directors) shall have general supervision of all the business affairs of the school district, subject to the instruction and direction of the board of school directors.

The Massachusetts law [6] states:

A superintendent employed under this section . . . shall be the executive officer of the committee (school committee), and, under its general direction, shall have the care and supervision of the public schools, shall assist it in keeping its records and accounts and in making such reports as are required by law, and shall recommend to the committee, teachers, textbooks, and courses of study.

The Rules and Regulations of the Grand Rapids, Michigan, Board of Education, 1924, have the following provision: [7]

The affairs of the board of education shall be administered by two general departments known, respectively, as the educational department and the business department.

Public Education as a State Function

Education in the public schools is a function of the state. Cubberley says: [8]

In all this development (of public education), however, it should be noted that the authority and power to develop have come from the state.

Court Decisions.

1. Gunnison *v.* The Board of Education of the City of New York:

It is apparent from the general drift of the argument that the learned counsel for the defendant is of the opinion that the employment of the teachers in the public schools, and the general conduct and management of the schools, is a city function in the same sense as it is in the care of the streets, or the employment of police, and the payment of their salaries and compensation; but that view of the relations of the city to public education, if entertained, is an obvious mistake. The city cannot rent, build, or buy a schoolhouse. It cannot employ or discharge a teacher, and has no power to contract with teachers with respect to their compensation. There is no contract or official relation, expressed or implied,

[5] *Pennsylvania School Law* and Appendix, 1923, p. 35.

[6] *Massachusetts General Laws Relating to Education*, Chap. 71, Sec. 59.

[7] Engelhardt, N. L. and Engelhardt, Fred, *Public School Business Administration*. Bureau of Publications, Teachers College, Columbia University, New York, 1927, p. 45.

[8] Cubberley, E. P., *Public School Administration*. Houghton Mifflin Company, Boston, 1916, Chap. II.

between the teachers and the city. All this results from the settled policy of the state from an early date to divorce the business of public education from all other municipal interests or business, and to take charge of it, as a peculiar and separate function, through agents of its own selection, and immediately subject and responsive to its own control.

In the case of Ridmour *v.* The Board of Education of the City of Brooklyn,[9] the court said:

He is an employee of the board of education. It is not a part of the corporation of the City of Brooklyn, but is itself a local school corporation, like every board of school trustees throughout the state, and is, like every such board, an integral part of the general school system of the state. It is a state and not a city agency, doing state and not city work and functions. Education is not a city, village, county, or town business. It is a matter belonging to the state government. From its comprehensive foundation by Chapter 75 of the Laws of 1795 down to the recent codification of our school laws, our state system of education has remained a consistent whole.

2. *Indiana.* In the case of the State *ex rel.* Clark *et al. v.* Haworth,[10] the Supreme Court, in deciding the constitutionality of an act giving to the state board of education control of the new state textbook system, said:

Essentially and intrinsically, the schools in which are educated and trained the children who are to become the rulers of the Commonwealth are matters of state, and not of local, jurisdiction. In such matters the state is a unit, and the legislature the source of power. The authority over schools and school affairs is not necessarily a distributive one, to be exercised by local instrumentalities; but, on the contrary, it is a central power residing in the legislature of the state.

3. *Illinois.* In the case of Speiglet *v.* The People,[11] the court held:

All laws whether in city charters or elsewhere, designed to affect free schools, may be regarded simply as school laws. And although they may require the boundary lines of cities to be adopted as lines for the formation of school districts, and that city officers shall perform the duties of school officers, yet this is for convenience only, and the districts thus to be formed, and the officers thus required to perform duties, are to be regarded simply as agencies selected by the state to provide a system of free schools. Although the limits and officers of the two corporations are the same, their purposes and objects are different, and, they are, in fact, separate

[9] 15 New York Misc., 418.
[10] 23 *New England Reporter*, 946.
[11] 87 Illinois, 595.

and distinct corporations. The one has its existence and is limited in the powers it may exercise by its charter, proper; the other by the school law.

4. *California.* In the case of Kennedy *v.* Miller,[12] the Supreme Court said:

> The City of San Diego is a corporation distinct from the corporation known as the School District of the City of San Diego, and the rights and obligations of the school district corporation are to be determined by charter of the City of San Diego; and a provision of its charter, that all moneys belonging to the school fund of the city shall be deposited with the city treasurer, does not supersede the requirement of the Political Code that all moneys pertaining to the public school fund shall be paid into the county treasury.

Delegated Legislation

Education being a function of the state, students of educational administration are sometimes bothered in reconciling or understanding the existence of such a wide range in the amount of state control. They are bewildered by the wide range of the degree to which boards of education perform executive functions, and the consequent wide range in the degree to which the superintendent of schools performs executive functions.

A generally accepted principle of public school administration is that the superintendent of schools is an executive officer. Cubberley [13] and Strayer are two of the leading proponents of the administration of the public school system by a single executive, the superintendent of schools.[14] Strayer says:

> The fetish of the efficiency of the business man has often operated to interfere with sound principles of administration. Not only in the administration of schools, but also in the administration of private enterprises, efficiency demands that there be a chief executive officer to whom all other executives are responsible. In our larger cities, the superintendent of schools has been chosen for this office usually after a long period of successful experience in smaller cities or in subordinate executive positions in the larger city which he serves. Even though the superintendent of schools may not be entirely familiar with all of the details of accounting, purchasing, planning of buildings, letting of contracts and the like, it seems only reasonable to suppose that he has sufficient executive ability to direct the activities of that part of the school organization having to do

[12] 97 California, 429.

[13] Cubberley, E. P., *Public School Administration.* Houghton Mifflin Company, Boston, 1916, p. 81.

[14] Strayer, G. D., *Proceedings*, Department of Superintendence, National Education Association, Washington, D. C., 1925, pp. 165-66.

with these affairs. To set up a separate business organization with coordinate authority is to propose that the business affairs of the school system can be conducted without reference to the educational program which the schools are providing and in the furthering of which all administrative activities find their real significance.

The Superintendent of Schools and Legislative Functions

A careful study of public school administration, including state laws and the rules and regulations of boards of education shows that the superintendent of schools not only performs executive functions but that he also exercises *legislative functions.*

The Massachusetts school law[15] says:

> An employment certificate shall be issued only by the superintendent of schools or by a person authorized by him in writing. . . . The superintendent of schools may, or a person authorized by him in writing may, revoke the employment certificate or home permit of any child failing to attend a continuation school. . . .

The Massachusetts school law authorizes the superintendent of schools to waive certain educational requirements in granting working certificates "if in the opinion of the superintendent of schools such person (child between fourteen and sixteen years of age) is mentally incapable of acquiring the educational qualifications herein prescribed."

Section 7 of the Rules and Regulations of the School Committee (Board of Education) of Revere, Massachusetts, states:

> He (the superintendent of schools) shall determine the use to be made of the buildings provided for the use of the schools, and the quarters to which the schools and separate classes shall be assigned.

These duties of the superintendent of schools are clearly legislative. They are authorized under the principle of *delegated legislation.*

Carr[16] says:

> When we offer the citizen-father the Acts about education, we have to add that he will not understand how they work unless he also studies the codes and regulations issued thereunder by the board of education.
>
> If anyone opens at random a recent annual volume of public general statutes, he will not have to turn many pages before finding a provision

[15] Massachusetts State Board of Education, *General Laws Relating to Education,* Chap. 149, Secs. 87 and 88.

[16] Carr, Cecil T., *Delegated Legislation.* Cambridge University Press, London, 1921, pp. 1 and 2.

that His Majesty may make Orders in Council, or that some public body or officer or department may make rules or regulations, contributing some addition to the substance or the detail or the working out of that particular Act. When . . . our supreme law-making authority expressly allows some other authority to undertake this kind of supplementary law-making, the result is what we call delegated legislation.

Carr[17] cites three main justifications for the delegation of legislative power by Parliament: (1) Parliament has not time to do otherwise. (2) The limitation of aptitude. (3) The country is governed by the executives, i.e., the Ministers of the Crown. He also lays down the principle that to adopt an Act is delegated legislation.

The principles of delegated legislation laid down by Carr[17] apply to the United States as well as to England.

Cubberley[18] says:

Ultimate state control, however, does not of necessity involve immediate state direction and oversight in anything. The state may delegate its authority, in whole or in part, to the subdivisions it creates within itself for purposes of local administration. As a matter of fact every state does so, though some do it to a much greater extent than do others.

The court decisions cited on pages 30, 31, and 32 show that the legislative power of boards of education is the power of delegated legislation.

Every one of the forty-eight states has a code of school laws. All of them delegate legislative authority to the boards of education within the individual states.[19] The power and authority of boards of education, therefore, are delegated power and authority. Many states, like Massachusetts, New York, Vermont, and New Hampshire, delegate authority directly to the superintendent of schools, and herein lies the justification for the principle that the superintendent of schools is a state officer.

The rules and regulations or by-laws of boards of education, which give to the superintendent of schools authority to make rules and regulations to govern the use of buildings, etc., delegate legislative functions to the superintendent. In all of the New England States, many school committees have adopted regulations giving the superintendent authority to close the schools

[17] Carr, Cecil T., *Delegated Legislation.* Cambridge University Press, London, 1921.

[18] Cubberley, E. P., *Public School Administration.* Houghton Mifflin Company, Boston, 1916, p. 19.

[19] *Ibid.*

under certain conditions. A by-law or rule of the Revere, Massachusetts, School Committee is:

> In stormy or excessively warm weather the superintendent may close schools for one or both sessions.

The Revere School Committee (Board of Education) itself has no authority except by a vote, a legislative act, in a meeting duly convened, to close the schools on a particular day, but the School Committee through its Rules and Regulations (by-laws) has conferred upon the superintendent of schools through the principle of delegated legislation the power to perform for it a legislative function.

Carr [20] says:

> By-laws are as good laws as Acts of Parliament. . . .

Certainly a vote of the school committee to close schools for any purpose during the regular term is a legislative act, and the authority for the act is found in the state law which delegates to the school committee (board of education) authority to administer the local school system and to make rules and regulations. It is plain that this is delegated legislation. If the school committee votes to close schools and the superintendent simply issues directions in accordance with the vote of the committee, then the superintendent is performing an *executive* function. On the other hand, when the superintendent, acting under rules or by-laws of the school committee, closes schools on a particular occasion without a vote of the school committee, his act is an act of delegated legislation.

The principle of delegated legislation is found all through the American system of state and city government.

> The powers of the state are not derived from the towns, but those of the towns from the state. In other words, the people, without reference to towns existing at the time, or to possible towns thereafter, organized the state and fixed its authority. And ever since, the state has been making towns and unmaking them, adding to their powers and subtracting from them.[21]

The fact that the state was formed and its authority fixed by the people without regard to the then existing towns or cities

[20] Carr, Cecil T., *Delegated Legislation.* Cambridge University Press, London, 1921, p. 5.

[21] *Annual Report of the State Board of Education of Massachusetts,* 1898-1899, p. 188.

or future towns or cities, and that the powers of the state are not derived from the towns, but those of the towns from the state, shows that there is no such thing as "a city's right to home rule in educational affairs." Substantiating proof of this statement is found in court decisions.

5. *Illinois.* In the case of Speiglet *v.* The People,[22] the court held:

> All laws, whether in city charter or elsewhere, designed to affect free schools, may be regarded simply as school laws. And although they may require the boundary lines of cities to be adopted as lines for the formation of school districts, and that city officers shall perform the duties of school officers, yet this is for convenience only, and the districts thus to be formed, and the officers thus required to perform duties, are to be regarded simply as agencies selected by the state to provide a system of free education.

Other court decisions already quoted in this chapter adhere to the principle that the right to exercise control over the schools is vested in the state, and not in the cities.

It is of interest and importance to note that there is a distinct difference between the sources of the powers of the state and the sources of the powers of the Federal Government. The powers of the state are inherent in the state, and, as stated in the *Annual Report of the State Board of Education of Massachusetts,* 1898-1899, are "not derived from the towns," or cities. On the other hand, the powers of the Federal Government are not inherent in the National Government, but originally belonged to the states themselves. The powers of the Federal Government were conferred upon the Federal Government by the thirteen original sovereign states through an agreement known as the Constitution of the United States. Indisputable proof of this fact is found in the provision that powers not conferred upon the Federal Government by the Constitution are reserved to the several states.

City charters are state enactments or acts. The legislative powers of city councils are restricted to the legislative powers conferred in the charters by the state because they are the *powers of delegated legislation* which the state has seen fit to grant, and which the state may at any time recall. The same principle of delegated authority holds true in executive powers, and for powers which are partly executive and partly legislative. For

[22] 87 Illinois, 595.

instance, most city charters give to the Mayors the power to appoint the police commissioners subject to confirmation by the city councils, but in Boston the state has recalled this power to itself and the Governor of the Commonwealth appoints the Boston Police Commissioner.

Summary and Conclusions

1. The superintendent of schools should be the chief executive officer of the board of education and general manager of the school system.

2. There is a wide diversity of practice regarding the status of the superintendent of schools as an executive officer. In New York State the superintendent of schools is by state law the chief executive officer of the board of education. In Massachusetts the superintendent is by state law designated "the executive officer of the school committee" (board of education), but in some Massachusetts cities he is not the sole executive officer of the school committee. In other Massachusetts cities the superintendent of schools is the chief executive officer of the school committee, but certain parts of the educational program are administered by executive officers who are not responsible to the board of education but are responsible to some municipal board or official. In some cities in various parts of the United States, the rules and regulations of the board of education provide for one or more executive officers who are independent of the superintendent of schools.

3. Education is a function of the state.

4. The principle of delegated legislation is commonly applied in the United States of America.

5. The powers of boards of education are, without exception, powers delegated by the state through acts which embody the principle of delegated legislation.

6. Cities and local communities do not possess a "right to home rule in education."

7. The superintendent of schools is an officer of the board of education, and is at the same time an officer of the state.

8. Most of the powers of the superintendent of schools are powers delegated by the board of education and may be modified by the board of education.

9. Some of the powers of the superintendent of schools are delegated to him by the state, and some of the powers so delegated cannot be modified by the board of education.

10. The functions performed by the superintendent of schools are largely executive.

11. Some of the functions performed by the superintendent of schools are *legislative* in that he performs acts of delegated legislation.

CHAPTER VI

PER CENT OF TIME THAT SUPERINTENDENTS DEVOTE TO SUPERVISION

The investigator attempted to find out the per cent of time devoted to problems of supervision and to problems of administration by superintendents of schools in cities within the 20,000 to 50,000 population range throughout the United States, and also in twenty-two Massachusetts cities. In the case of the cities outside of Massachusetts, the attempt was made by means of a questionnaire. The answers were so conditioned by reservations and exceptions and frank statements by the superintendents that the estimates were guesses, that the data are too unreliable to use in drawing any definite conclusions as to the average or median per cent of time devoted by superintendents to problems of supervision and to problems of administration. Of the unqualified answers regarding time devoted to problems of supervision, the range was from 5 per cent to 95 per cent.

In the case of the twenty-two Massachusetts cities, the investigation was more objective in that the personal interview was used instead of the questionnaire. Administration was defined as including:

Board of education matters such as work on budget, reports, including monthly reports (financial and others), and special reports; conferences with board members, other city officials, janitors, attendance officers, pupils, parents, teacher-candidates, teachers on matters not pertaining to instruction, textbook and supply salesmen, outside organizations such as parent-teacher associations on matters pertaining to schools; contractors and workmen; time devoted to inspection of buildings and supervision of custodial care; all other office work.

Supervision was defined as including:

Time devoted to principals' meetings, supervisors' meetings, teachers' meetings, classroom visits, conferences with principals,

TABLE

PER CENT OF TIME DEVOTED TO PROBLEMS OF SUPERVISION BY MASSACHUSETTS

PER CENT OF TIME	POPULATION					
	20,000 22,499	22,500 24,999	25,000 27,499	27,500 29,999	30,000 32,499	32,500 34,999
80-84						
75-79		1				
70-74						
65-69						
60-64						
55-59						
50-54		1			2	
45-49						
40-44						
35-39						
30-34						
25-29	1					
20-24	3	2				
TOTAL CITIES	4	4			2	

supervisors, teachers, and pupils on matters pertaining to teaching or learning; work on the curriculum, professional reading.

Table 1 gives the results of the investigation of the time devoted to supervision by Massachusetts superintendents in twenty-two cities arranged according to size of city.

The range is from 20 per cent to 80 per cent, inclusive. The mean is 48.1±3 per cent. The standard deviation of the distribution of per cents is 21. The median per cent of time devoted to supervision is 50. Q_1 is 24.17 and Q_3 is 62.5. Q, therefore, is 19. The mean of the distribution of per cents of time devoted to supervision is 48.1±3. There is a fifty-fifty chance, then, that the true mean is not more than 51.1 or less than 45.1, and there is practical certainty that the true average estimated per cent of time devoted to problems of supervision by superintendents in twenty-two Massachusetts cities is somewhere between 36 per cent and 60 per cent.

Table 1 shows an apparent relationship between the size of Massachusetts cities and the per cent of time that the superintendents in those cities estimate they devote to problems of supervision. The coefficient of correlation is .35. Seemingly, the larger the Massachusetts city the greater is the per cent of time the superintendents of schools devote to problems of supervision. The probable error of the coefficient of correlation, however, is

1

SUPERINTENDENTS IN 22 CITIES ACCORDING TO SIZE OF CITY

OF CITIES							TOTAL CITIES
35,000 37,499	37,500 39,999	40,000 42,499	42,500 44,999	45,000 47,499	47,500 49,999	50,000	
1				1			2
							1
			1		1		2
						1	1
			1				1
					1		1
	1					1	5
							0
1							1
			1				1
							0
							1
1							6
3	1		3	1	2	2	22

.13. The coefficient of correlation, therefore, is only 2.69 times its probable error, and since "to be reasonably sure that there is some correlation present an obtained r should be at least four times its P.E.," [1] it is not possible to conclude that there actually is any relationship between the size of Massachusetts cities and the per cent of time Massachusetts superintendents devote to problems of supervision.

SUMMARY AND CONCLUSIONS

1. Superintendents of schools in cities of the United States in the 20,000 to 50,000 population range have little knowledge of the per cent of time they devote to problems of supervision and to problems of administration.

2. The range of the per cent of time that superintendents in twenty-two Massachusetts cities estimate they devote to problems of supervision is from 20 per cent to 80 per cent, inclusive.

3. The average estimated per cent of time devoted to problems of supervision by twenty-two Massachusetts city superintendents is 48.1 ± 3.

4. There is practical certainty that the true average of the per cent of time that the Massachusetts superintendents estimate

[1] Garrett, H. E., *Statistics in Psychology and Education.* Longmans, Green & Company, New York, 1927, p. 170.

they devote to problems of supervision lies somewhere between 36 per cent and 60 per cent.

5. It is impossible to conclude from the data whether or not there is any actual relationship between size of city and the per cent of time that superintendents estimate they devote to problems of supervision.

CHAPTER VII

CERTAIN ADMINISTRATION POLICIES IN MASSACHUSETTS CITIES AND IN 163 CITIES THROUGHOUT THE UNITED STATES

Opposing Theories of Proper Relationship between the City and the City School System

There are two opposing theories of the proper relationship between the city and the city school system.[1] One theory regards the local school system as one of the departments of the municipal government, and gives to the municipal authorities the same power to review and control the amount of school budgets and to levy school taxes as in the case of any municipal department. The proponents of the departmental or dependent school system theory maintain that independent school systems tend to be extravagant. They also contend that sound budgeting procedure requires that school expenditures be subject to municipal control.

Anderson [2] says:

> If the school board, the park board, and other authorities in addition to the council have independent powers of taxation, and they may appropriate the sums which they raise in different ways without any actual control, the city is still without a budget system.
>
> They (the school men) have apparently become so engrossed in the work of education that they have forgotten about the other functions that must be carried on by the city government, many of which are equally as important as education. As they see it, the city authorities can make up a budget for all municipal activities, weighing the needs of one against the other and cutting the estimates to come within anticipated revenues, but the schools must be left financially free with the definite assurance of an increasing budget from year to year.
>
> In many of the cities, just this situation exists at the present time. The

[1] Engelhardt, N. L. and Engelhardt, Fred, *Public School Business Administration.* Bureau of Publications, Teachers College, Columbia University, New York, 1927.

[2] Anderson, W., *American City Government.* Henry Holt and Company, New York, 1925.

schools are getting as much as 50 per cent of the total revenues of the city, leaving all of the other activities of the city government to be financed on the remaining 50 per cent.

Anderson presents very little evidence in support of his charge of extravagance. He cites the case of only one city school system to support his sweeping claim. He presents no evidence at all to substantiate his statement that "the schools are getting as much as 50 per cent of the total revenues of the city."

The second theory regarding the relationship between the city and the city school system is that the school system is not and should not be a department of the municipal government, that education is a function of the state, and that the board of education is a state and not a city agency.[3]

In his study, *Fiscal Administration of City School Systems,* McGaughy has shown that fiscally independent city school systems and fiscally dependent city school systems expend about the same amount of money for public school education, there being no significant difference between the averages.

In order to supplement the data obtained from the United States Bureau of Education and the Research Division of the National Education Association, the investigator obtained data for twenty-two Massachusetts cities by personal investigation and from one hundred forty-seven cities outside of Massachusetts by using a questionnaire. The following questions were submitted to the superintendents of schools:

1. Is the budget of the board of education subject to reduction by any municipal reviewing board or official other than the board of education?
2. Is authority to purchase school sites and to construct schoolhouses vested in the board of education?
3. Is the control and maintenance of school buildings vested in the board of education?
4. Is there a business agent or manager of business affairs in the school system who is directly responsible to the board of education?
5. Is the control of health service for schools including the appointment of nurses and physicians vested in the board of education?

[3] See Chap. V.

McGaughy,[4] in his study, *Fiscal Administration of City School Systems*, classified 377 cities, listed in the 1920 *Federal Census Report*, having a population of 8,000 or more. Forty-seven per cent of these were found to be fiscally independent. Forty-eight per cent of the cities between 8,000 and 50,000 were found to be fiscally independent, while 24 per cent were fiscally dependent, and 28 per cent were "special."

Tables 2 and 3 show the number and per cent of cities having certain administrative policies: 61 per cent of the 169 cities are fiscally independent; 70 per cent of the cities, exclusive of the 22 Massachusetts cities, are fiscally independent; and no Massachusetts city is fiscally independent.

Authority to purchase school sites and to construct school buildings is vested in the board of education in 129, or 76 per cent, of the 169 cities; in 128, or 87 per cent, of the cities exclusive of the Massachusetts cities; and in 1, or 5 per cent, of the 22 Massachusetts cities.

The control and maintenance of school buildings is vested in the board of education in 162, or 96 per cent, of the 169 cities; in 144, or 98 per cent, of the cities exclusive of the 22 Massachusetts cities; and in 18, or 82 per cent, of the Massachusetts cities.

There is a business agent or manager of business affairs in the school system in 34, or 20 per cent, of the 169 cities; in 33, or 22 per cent, of the 147 cities, exclusive of the 22 Massachusetts cities; and in one, or 5 per cent, of the 22 Massachusetts cities.

The control of health service for schools is vested in the board of education in 147, or 87 per cent, of the 169 cities; in 135, or 92 per cent, of the cities, exclusive of the 22 Massachusetts cities; and in 12, or 55 per cent, of the 22 Massachusetts cities.

Fiscal Independence and Efficient Administration

Frasier[5] applied the "index number" technique[6] to a number of factors that are necessary for an effective administration of a

[4] McGaughy, J. R., *Fiscal Administration of City School Systems*. The Macmillan Company, New York, 1924.

[5] Frasier, G. W., *The Control of City School Finances*. The Bruce Publishing Company, Milwaukee, Wisconsin, 1922, Chap. II.

[6] Applied in an educational study for the first time by L. P. Ayers in his study, *An Index Number for State School Systems*. Russell Sage Foundation, New York, 1919.

TABLE 2

NUMBER OF CITIES HAVING CERTAIN ADMINISTRATIVE POLICIES

SEE CODE BELOW	169 CITIES, INCLUDING 22 MASSACHUSETTS CITIES		147 CITIES, EXCLUSIVE OF 22 MASSACHUSETTS CITIES		22 MASSACHUSETTS CITIES	
	Yes	No	Yes	No	Yes	No
1	66	103	44	103	22	0
2	129	40	128	19	1	21
3	162	7	144	3	18	4
4	34	135	33	114	1	21
5	147	22	135	12	12	10
Total Number of Cities in Group Represented.	240		218		26	

TABLE 3

PER CENT OF CITIES HAVING CERTAIN ADMINISTRATIVE POLICIES

SEE CODE BELOW	169 CITIES, INCLUDING 22 MASSACHUSETTS CITIES		147 CITIES, EXCLUSIVE OF 22 MASSACHUSETTS CITIES		22 MASSACHUSETTS CITIES	
	Yes	No	Yes	No	Yes	No
1	39	61	30	70	100	0
2	76	24	87	13	5	95
3	96	4	98	2	82	18
4	20	80	22	78	5	95
5	87	13	92	8	55	45
Per Cent (in This Table) of Total Number of Cities in Group Represented.	70		67		85	

Code, Certain Administrative Policies:

1. The budget of the board of education is subject to reduction by some municipal board or officer other than the board of education.

2. Authority to purchase school sites and to construct schoolhouses is vested in the board of education.

3. The control and maintenance of school buildings is vested in the board of education.

4. There is a business agent or manager of business affairs in the school system who is directly responsible to the board of education.

5. The control of health service for schools including the appointment of nurses and physicians is vested in the board of education.

school system. Six items were used, and all cost factors were excluded. One hundred sixty-nine school systems were evaluated and the correlation between fiscal dependence and school efficiency was found to be negative (—.27). The study appears to show that fiscally independent school systems produce a more effective management.

McGaughy [7] made an intensive study of 377 city school systems regarding the effect of financial control on the management of the schools. On the whole McGaughy's findings, like those of Frasier, point to the superiority of fiscal independence, and without greater expenditures.

The results of careful and comprehensive studies [8] of many individual school systems present very strong evidence of the superiority of fiscal independence over fiscal dependence in city school systems.

Anderson [9] states:

> . . . in the recent movement toward the consolidation of municipal departments, park boards, police boards, health boards, and boards of public works have in many cases been abolished and their functions have been transferred to regular city departments. The school board, too, has been forced to yield in some degree to the new tendency.

Anderson furnishes no evidence to substantiate his statement regarding the board of education. There is no evidence available to indicate that fiscal independence of school systems is declining. In fact the weight of evidence is that the percentage of fiscally independent school systems is increasing. A recent case in point is that of Newburgh, New York. By an Act of amendment to the Newburgh City Charter by the New York Legislature in 1929, the Newburgh Board of Education was granted complete fiscal independence. The data obtained in the present study show an increase in the per cent of fiscally independent cities since McGaughy's study in 1924.

[7] McGaughy, J. R., *Fiscal Administration of City School Systems.* The Macmillan Company, New York, 1924.

[8] Strayer, G. D., Engelhardt, N. L. and Others, *Report of the Survey of the Public School System of Baltimore, Maryland; Report of the Survey of the Public School System of Springfield, Massachusetts; Report of the Survey of Certain Aspects of the Public School System of Providence, Rhode Island; Report of the Survey of the Schools of Newburgh, New York.* Bureau of Publications, Teachers College. Columbia University, New York.

[9] Anderson, W., *American City Government.* Henry Holt and Company, New York, 1925, pp. 90-95.

Summary and Conclusions

1. There is a tendency toward an increase in the per cent of fiscally independent city school systems.

2. Of the 147 cities from which data were obtained, exclusive of Massachusetts cities, 70 per cent are fiscally independent.

3. Fiscal independence of school systems does not exist in Massachusetts cities.

4. Authority to purchase school sites and to construct schoolhouses is vested in the board of education in more than 75 per cent of the cities of the country as a whole.

5. In Massachusetts such authority is not vested in the board of education (school committee) to any appreciable extent.

6. The control and maintenance of school buildings is vested in the board of education in 96 per cent of the cities.

7. Such control is vested in the school committee in 82 per cent of the Massachusetts cities.

8. There is a business agent or manager of business affairs who is directly responsible to the board of education in 22 per cent of the cities, exclusive of the Massachusetts cities.

9. The business agent who is not directly responsible to the superintendent of schools is found in only one Massachusetts city.

10. The control of health service in the schools is vested in the board of education in 92 per cent of the cities, exclusive of the Massachusetts cities.

11. Such control is vested in the school committee in 55 per cent of the Massachusetts cities.

12. In the light of the consensus of opinion of educational authorities as to what constitutes good educational administrative policies, and in the light of tested principles of educational administration, the administrative policies of Massachusetts cities are less desirable than those of the other cities in the following items:

a. Fiscal independence.

b. Authority to purchase school sites and to construct schoolhouses.

c. The control of health service in the schools.

The administrative policy of Massachusetts cities is more desirable than that of the other cities in that:

Business agents are not directly responsible to the board of education.

There is no appreciable difference between the policy in Massachusetts cities and in the other cities in the item of the control and maintenance of school buildings.

CHAPTER VIII

THE NUMBER OF PUPILS IN COMPARISON WITH THE NUMBER OF CERTAIN EMPLOYEES

One of the important factors which must be considered in the administrative and supervisory organization of a city school system is the number of certain classes of employees compared with the number of pupils.

In this study, the numerical relationships between the number of pupils and the number of certain classified employees, and the numerical interrelationships between classified employees are made. These relationships for the 22 Massachusetts cities, for the 163 cities (the total number studied minus the 22 Massachusetts cities), and the total 185 cities, are presented in the pages immediately following.

The correlation coefficients[1] which express the relationships referred to above were determined by the product-moment method and Pearson's formula.

Tables 4 and 6 give the population, the number of pupils, and the number in certain classified employee groups for the 185 cities in this study. Table 4 represents Massachusetts cities. The 185 cities represented in Tables 4 and 6 constitute 70 per cent of the total number of cities in the 20,000 to 50,000 population group. The cities are well distributed geographically and represent a fair sampling of all United States cities of this population range.

The geographical distribution by sections of the country is: Group A, Eastern, 78; Group B, Southern, 21; Group C, Great Lakes, 52; Group D, Great Plains, 17; Group E, Western, 17.

The coefficients of correlation, the probable errors of the correlation coefficients, and the ratios (the coefficient of correlation

[1] Garrett, H. E., *Statistics in Psychology and Education.* Longmans, Green & Company, New York, 1927.

TABLE 4

POPULATION, PUPIL MEMBERSHIP, AND NUMBER OF CERTAIN CLASSIFIED EMPLOYEES IN CITY SCHOOL SYSTEMS IN 22 MASSACHUSETTS CITIES

CITY	POPULATION	PUPIL MEMBERSHIP	NUMBER OF TEACHERS †	NUMBER OF SUPERVISORS	NURSES	ATTENDANCE OFFICERS	OFFICE EMPLOYEES
1	30,000	4,912	227	8	2	1	6
2	20,000	3,171	130	5	2.5	1	2
3	22,750	4,406	188	6	3	1	5
4	44,000	5,284	250	9	4	1	4
5	48,000	7,577	280	7	5	1	2
6	43,000	6,497	221	5	3	2	3
7	45,000	8,335	316	9	5	1	4
8	22,500	4,090	160	8	2	1	2
9	23,500	3,941	158	6	2	1	2
10	22,000	2,812	118	12	2	1	2
11	50,000	8,009	284	11	5	1	4
12	50,000	8,963	350	14	3	1	5
13	22,400	3,504	130	9	2	1	2
14	36,000	3,415	127	5	1	1	1
15	22,800	3,056	133	8	1	1	2
16	21,000	3,912	140	9	3	1	2
17	48,700	8,086	325	10	3	1	2
18	•35,600	7,529	293	10	4	2	4
19	43,000	5,141	200	7	1	1	2
20	39,900	5,930	254	6	1	1	3
21	36,500	4,764	185	7	3	1	4
22	30,500	4,846	184	8	3	1	3
S.D.*....		1,800	70	2	1.2		1.2
Mean ...	34,886	5,386	211	8	2.7	1.1	3
Range...		2,812 to 8,963	118 to 350	5 to 14	1 to 5		

* Standard Deviation.

† "Number of teachers" includes teachers, principals, assistant principals, and supervisors.

TABLE 5

PUPIL MEMBERSHIP AND NUMBER OF PUPILS PER CLASSIFIED EMPLOYEE IN 22 MASSACHUSETTS CITIES

CITY	PUPIL MEMBERSHIP	PUPILS PER TEACHER	PUPILS PER SUPERVISOR	PUPILS PER NURSE	PUPILS PER ATTENDANCE OFFICER	PUPILS PER OFFICE EMPLOYEE
1	4,912	22	614	2,456	4,912	819
2	3,171	24	640	1,268	3,171	1,585
3	4,406	23	735	1,469	4,406	881
4	5,284	21	587	1,763	5,284	1,321
5	7,577	27	1,083	1,515	7,577	3,788
6	6,497	29	1,299	2,166	3,248	2,526
7	8,335	26	937	1,667	8,335	2,084
8	4,090	26	512	2,045	4,090	2,045
9	3,941	25	657	1,970	3,941	1,970
10	2,812	24	234	1,406	2,812	1,406
11	8,009	28	728	1,602	8,009	2,002
12	8,963	26	730	2,988	8,963	1,793
13	3,504	27	390	1,754	3,504	1,754
14	3,415	27	683	3,415	3,415	3,415
15	3,056	22	382	3,056	3,056	1,528
16	3,912	28	435	1,304	3,912	1,956
17	8,086	25	809	2,696	8,086	4,043
18	7,529	26	753	1,882	3,765	1,882
19	5,141	26	734	5,141	5,141	2,570
20	5,930	23	988	5,930	5,930	1,976
21	4,764	26	681	1,588	4,764	1,191
22	4,846	26	606	1,615	4,846	1,615
S.D.	1,800	2	228	601	1,874	818
Mean	5,386	25.82	691	2,331	5,059	2,005
Range		21 to 28	382 to 1,299	1,268 to 5,930	2,812 to 8,963	819 to 5,930

TABLE 6

POPULATION, PUPIL MEMBERSHIP, AND NUMBER OF CERTAIN CLASSIFIED EMPLOYEES IN CITY SCHOOL SYSTEMS IN 163 CITIES, EXCLUSIVE OF MASSACHUSETTS CITIES

CITY	POPULATION	PUPIL MEMBERSHIP	NUMBER OF TEACHERS *	NUMBER OF SUPERVISORS	NURSES	ATTENDANCE OFFICERS	OFFICE EMPLOYEES
1....	41,700	9,079	393	5	4	1	5
2....	30,100	4,970	183	8	2	1	3
3....	36,800	5,246	218	4	2	1	2
4....	23,100	2,460	91	6	2	1	2
5....	25,100	4,370	161	5	3	1	2
6....	23,300	4,205	145	6	4	1	3
7....	21,500	2,607	112	7	2	1	1
8....	25,900	4,773	247	7	3	1	3
9....	35,000	2,832	115	5	1	1	1
10....	26,800	4,629	186	8	4	1	2
11....	30,000	3,983	159	1	2	1	1
12....	48,100	7,735	266	5	4	3	6
13....	38,900	5,595	240	12	2	2	5
14....	35,800	5,566	209	7	4	1	6
15....	23,344	5,289	199	9	2	3	4
16....	35,000	6,285	232	9	5	1	3
17....	48,000	6,809	275	7	3	3	6
18....	25,500	6,734	209	3	2	2	1
19....	20,100	4,438	212	1	3	1	4
20....	30,400	4,533	203	5	2	1	2
21....	50,000	7,372	352	10	6	1	6
22....	60,000	9,278	402	8	8	1	7
23....	30,000	4,935	215	12	5	2	11
24....	35,600	5,830	265	8	9	2	2
25....	33,000	5,193	225	7	6	1	3
26....	35,800	5,061	208	9	4	1	6
27....	44,300	7,560	348	11	4	2	10
28....	49,000	6,618	283	8	5	1	4
29....	20,800	2,804	106	5	1	1	2
30....	38,400	3,887	159	8	3	2	2
31....	21,400	4,466	182	10	2	1	4
32....	20,000	2,886	155	8	1	1	3
33....	22,110	3,714	155	11	3	1	2
34....	36,800	7,132	256	6	4	1	4
35....	49,500	9,354	336	12	3	2	7
36....	50,000	10,076	354	4	2	1	5
37....	23,600	3,899	120	7	1	1	2
38....	49,400	8,007	314	11	4	1	8
39....	43,100	7,270	252	6	5	1	3
40....	37,400	5,922	226	8	4	1	6
41....	23,300	4,445	150	9	3	1	2

* "Number of teachers" includes teachers, principals, assistant principals, and supervisors.

TABLE 6 (*Continued*)

City	Population	Pupil Membership	Number of Teachers	Number of Supervisors	Nurses	Attendance Officers	Office Employees
42....	23,000	4,104	111	10	1	1	3
43....	21,800	5,120	171	6	1	1	3
44....	21,800	2,658	104	5	1	1	2
45....	24,726	3,566	112	1	1	1	3
46....	25,500	4,754	146	4	3	1	3
47....	22,000	4,969	137	2	2	1	3
48....	21,600	3,612	131	6	1	1	3
49....	25,300	4,042	134	1	3	1	2
50....	28,000	4,597	194	8	3	2	2
51....	25,500	4,640	165	8	2	1	3
52....	23,000	2,734	116	4	1	1	4
53....	21,700	2,146	88	8	1	1	1
54....	50,000	4,916	197	5	3	1	2
55....	31,374	4,433	152	1	1	1	1
56....	26,000	4,341	136	1	3	1	3
57....	20,100	3,683	104	2	0	1	1
58....	21,000	3,505	123	5	0	1	1
59....	22,600	3,968	102	2	0	1	1
60....	33,937	5,546	197	5	0	1	1
61....	26,100	4,760	188	4	1	1	2
62....	29,317	3,072	122	7	1	1	2
63....	22,200	2,984	125	3	0	1	2
64....	21,200	3,778	128	5	0	1	1
65....	24,500	4,832	176	1	1	1	1
66....	24,300	6,333	216	2	1	1*	2
67....	37,300	6,192	200	1	0	1	2
68....	43,000	6,892	236	7	1	1	3
69....	38,200	7,198	309	6	1	1	3
70....	48,400	5,926	241	8	1	1	2
71....	44,600	8,448	336	2	0	1	3
72....	50,000	8,047	264	5	2	1	2
73....	38,500	7,215	247	5	3	1	2
74....	21,500	5,320	204	4	2	1	3
75....	49,900	10,066	391	7	6	2	2
76....	36,100	4,963	177	3	1	1	2
77....	48,800	5,358	192	5	2	2	4
78....	34,100	4,724	200	7	1	1	3
79....	39,100	4,724	109	8	1	1	4
80....	40,300	4,858	195	8	1	1	4
81....	47,700	7,065	294	7	1	1	3
82....	43,100	7,840	236	6	2	1	3
83....	45,900	2,240	86	6	1	1	2
84....	45,900	3,835	148	2	1	1	1
85....	41,000	6,461	226	4	3	2	4
86....	37,200	7,010	252	2	2	1	2
87....	45,100	2,823	112	8	1	1	2

TABLE 6 (*Continued*)

City	Population	Pupil Membership	Number of Teachers	Number of Supervisors	Nurses	Attendance Officers	Office Employees
88....	20,900	3,094	108	2	1	1	1
89....	22,300	3,708	134	4	2	1	3
90....	20,100	2,615	91	7	1	1	1
91....	27,200	4,658	174	4	3	2	4
92....	30,700	4,309	162	7	1	1	3
93....	25,000	2,499	155	4	1	1	2
94....	47,300	7,629	281	10	5	2	6
95....	38,000	5,291	193	8	2	1	3
96....	44,700	6,707	295	9	2	2	5
97....	50,300	9,871	392	6	3	1	7
98....	23,000	3,380	141	9	0	1	7
99....	23,400	3,442	139	7	1	1	2
100....	24,000	3,551	146	0	0	1	2
101....	31,000	4,971	201	5	1	2	4
102....	49,000	6,715	300	7	1	1	3
103....	49,800	8,027	337	8	6	1	8
104....	44,300	7,114	328	10	4	2	7
105....	42,600	7,060	281	12	4	1	9
106....	50,000	8,456	377	11	4	1	4
107....	22,700	3,872	175	9	4	1	3
108....	30,000	3,985	147	3	1	2	3
109....	30,600	5,523	185	2	1	2	3
110....	39,800	7,577	266	7	1	2	2
111....	30,800	3,212	128	0	1	1	3
112....	24,100	4,009	131	4	1	1	2
113....	26,700	3,960	154	5	2	1	3
114....	24,800	3,720	119	4	2	1	4
115....	25,500	3,784	133	4	1	1	2
116....	24,400	4,301	160	9	1	1	2
117....	20,500	3,547	98	3	0	1	1
118....	25,600	4,734	170	3	2	1	4
119....	21,400	3,664	150	4	2	1	3
120....	30,400	4,995	183	5	0	1	3
121....	50,000	8,138	342	10	10	2	5
122....	22,600	3,952	186	4	2	1	2
123....	20,300	3,617	142	7	0	1	1
124....	34,900	4,600	218	8	0	1	3
125....	47,600	8,074	380	7	0	2	6
126....	33,200	5,334	208	5	2	1	2
127....	34,000	5,294	198	5	1	1	3
128....	39,671	6,319	272	8	4	1	5
129....	39,000	3,212	128	4	0	1	3
130....	40,300	7,949	284	8	3	1	4
131....	36,900	3,320	136	6	2	1	2
132....	36,900	3,867	154	7	2	1	2
133....	50,000	8,673	408	12	3	1	7

TABLE 6 (*Continued*)

City	Population	Pupil Membership	Number of Teachers	Number of Supervisors	Nurses	Attendance Officers	Office Employees
134....	41,300	4,187	200	6	5	1	3
135....	27,100	4,385	186	7	1	1	2
136....	23,500	4,512	165	4	1	1	2
137....	27,400	5,220	197	8	1	1	2
138....	26,700	5,231	181	6	1	1	1
139....	21,900	2,290	103	6	1	2	2
140....	29,902	6,058	207	2	1	1	2
141....	42,400	10,169	330	6	1	1	4
142....	20,000	3,430	132	2	1	1	2
143....	32,300	6,329	249	2	0	1	3
144....	26,600	3,430	161	6	1	1	3
145....	20,000	3,142	115	2	1	1	2
146....	31,200	5,748	270	11	0	1	5
147....	48,600	8,907	339	7	4	2	3
148....	44,100	8,500	448	5	5	1	4
149....	25,600	4,535	158	7	1	1	2
150....	25,600	6,774	279	9	3	1	5
151....	20,200	5,431	308	7	3	1	5
152....	23,600	7,697	312	4	2	2	5
153....	20,600	5,559	256	5	4	2	4
154....	24,800	4,672	211	7	2	2	5
155....	23,600	5,105	206	7	1	1	2
156....	43,900	3,903	172	8	2	2	4
157....	33,000	5,912	291	12	4	1	7
158....	23,200	4,138	162	6	1	1	4
159....	42,900	6,890	295	3	1	1	5
160....	37,600	8,290	298	6	1	1	4
161....	26,300	5,317	245	6	2	1	2
162....	29,600	5,824	214	5	2	1	2
163....	23,100	4,685	179	3	2	1	3
S.D.....		1,873	80	2.8	1.8		2
Mean ...	32,923	5,278	207	5.9	2.1	1.2	3.6
Range...		2,146 to 10,169	88 to 448	1 to 12	0 to 10	1 to 3	1 to 10

divided by the probable error) for the numerical elements are given in Table 8.

The coefficient of correlation, r, indicates the relationship between the elements compared. Rugg[2] regards correlation as being present but low where r ranges from .15 or .20 to .35 or

[2] Rugg, H. O., *Statistical Methods Applied to Education.* Houghton Mifflin Company, 1917, p. 266.

TABLE 7

PUPIL MEMBERSHIP AND NUMBER OF PUPILS PER CLASSIFIED EMPLOYEE IN 163 CITIES EXCLUSIVE OF MASSACHUSETTS CITIES

CITY	PUPIL MEMBERSHIP	PUPILS PER TEACHER	PUPILS PER SUPERVISOR	PUPILS PER NURSE	PUPILS PER ATTENDANCE OFFICER	PUPILS PER OFFICE EMPLOYEE
1	9,079	23	1,819	2,270	9,079	1,816
2	4,970	27	626	2,485	4,970	1,657
3	5,246	24	1,312	2,623	5,246	2,623
4	2,460	27	410	1,215	2,460	1,215
5	4,370	27	874	1,457	4,370	2,185
6	4,205	29	701	1,051	4,205	1,402
7	2,607	23	372	1,304	2,607	2,607
8	4,773	19	682	1,591	4,773	1,591
9	2,832	25	566	2,832	2,832	2,832
10	4,629	25	579	1,157	4,629	2,315
11	3,983	25	3,983	1,992	3,983	3,983
12	7,735	29	1,547	1,934	2,578	1,289
13	5,595	23	466	2,798	2,798	1,119
14	5,566	27	795	1,392	5,566	927
15	5,289	27	588	2,645	1,763	1,322
16	6,285	27	698	1,257	6,285	2,095
17	6,809	25	973	2,270	2,270	1,135
18	6,734	32	2,245	3,367	3,367	6,734
19	4,438	21	4,438	1,479	4,438	1,109
20	4,533	22	907	2,267	4,533	2,267
21	7,372	21	737	1,229	7,372	1,229
22	9,278	23	1,160	1,160	9,278	1,325
23	4,935	23	411	987	2,468	449
24	5,830	22	726	648	2,915	2,915
25	5,193	23	742	866	5,193	1,731
26	5,061	24	563	1,265	5,061	844
27	7,560	22	687	1,890	3,780	756
28	6,618	23	827	1,324	6,618	1,655
29	2,804	26	561	2,804	2,804	1,402
30	3,887	24	486	1,293	1,944	1,944
31	4,466	25	447	2,233	4,466	1,117
32	2,886	19	361	2,886	2,886	962
33	3,714	24	338	1,238	3,714	1,857
34	7,132	28	1,022	1,783	7,132	1,783
35	9,354	28	780	3,118	4,677	1,336
36	10,076	28	2,519	5,038	10,076	2,015
37	3,899	32	557	3,899	3,899	1,950
38	8,007	26	728	2,002	8,007	1,001
39	7,270	29	1,212	1,454	7,270	2,423
40	5,922	26	740	1,481	5,922	987
41	4,445	30	494	1,482	4,445	2,223
42	4,104	37	410	4,104	4,104	1,368
43	5,120	30	853	5,120	5,120	1,707

TABLE 7 (*Continued*)

City	Pupil Membership	Pupils per Teacher	Pupils per Supervisor	Pupils per Nurse	Pupils per Attendance Officer	Pupils per Office Employee
44	2,658	26	532	2,658	2,658	1,329
45	3,566	32	3,566	3,566	3,566	1,189
46	4,754	33	1,189	1,585	4,754	1,585
47	4,969	36	2,485	2,485	4,969	1,656
48	3,612	28	602	3,612	3,612	1,204
49	4,042	30	4,042	2,021	4,042	2,021
50	4,597	24	575	1,532	2,299	2,299
51	4,640	28	580	2,320	4,640	1,547
52	2,734	24	684	2,734	2,734	624
53	2,146	24	268	2,146	2,146	2,146
54	4,916	25	983	1,639	4,916	2,458
55	4,433	29	4,433	4,433	4,433	4,433
56	4,341	32	4,341	1,447	4,341	1,447
57	3,683	35	1,842	X	3,683	3,683
58	3,505	28	701	X	3,505	3,505
59	3,968	29	1,984	X	3,968	3,968
60	5,546	28	1,109	X	5,546	5,546
61	4,760	25	1,190	4,760	4,760	2,380
62	3,072	25	439	3,072	3,072	1,536
63	2,984	24	995	X	2,984	1,492
64	3,778	30	756	X	3,778	3,778
65	4,832	27	4,832	4,832	4,832	4,832
66	6,333	29	3,167	6,333	6,333	3,167
67	6,192	31	6,192	X	6,192	3,096
68	6,892	19	985	6,892	6,892	2,297
69	7,198	23	1,200	7,198	7,198	2,399
70	5,926	25	741	5,926	5,926	2,963
71	8,448	25	4,224	X	8,448	2,816
72	8,047	30	1,609	4,024	8,047	4,024
73	7,215	29	1,443	2,405	7,215	3,608
74	5,320	26	1,330	2,660	5,320	1,771
75	10,066	26	1,438	1,678	5,033	5,033
76	4,963	28	1,654	4,963	4,963	2,487
77	5,358	28	1,072	2,679	2,679	1,340
78	4,724	24	675	4,724	4,724	1,575
79	4,724	43	591	4,724	4,724	1,181
80	4,858	25	607	4,858	4,858	1,215
81	7,065	24	1,009	7,065	7,065	2,355
82	7,840	33	1,307	3,920	7,840	2,613
83	2,240	26	373	2,240	2,240	1,120
84	3,835	26	1,918	3,835	3,835	3,835
85	6,461	29	1,615	2,154	3,231	1,615
86	7,010	28	3,505	3,505	7,010	3,505
87	2,823	25	353	2,823	2,823	1,412
88	3,094	29	1,547	3,094	3,094	3,094

TABLE 7 (*Continued*)

City	Pupil Membership	Pupils per Teacher	Pupils per Supervisor	Pupils per Nurse	Pupils per Attendance Officer	Pupils per Office Employee
89	3,708	28	927	1,854	3,708	1,236
90	2,615	29	374	2,615	2,615	2,615
91	4,658	27	1,165	1,553	2,329	1,165
92	4,309	27	616	4,309	4,309	1,436
93	2,499	16	625	2,499	2,499	1,250
94	7,629	27	763	1,526	3,815	1,272
95	5,291	27	661	2,645	5,291	1,763
96	6,707	23	745	3,354	3,354	1,341
97	9,871	25	1,645	3,290	9,871	1,410
98	3,380	24	376	X	3,380	483
99	3,442	25	492	3,442	3,442	1,721
100	3,551	24	X	X	3,551	1,776
101	4,971	25	994	4,971	2,486	1,243
102	6,715	22	959	6,715	6,715	2,238
103	8,027	24	1,003	1,338	8,027	1,003
104	7,114	22	711	1,779	3,557	1,016
105	7,060	25	588	1,765	7,060	784
106	8,456	22	769	2,114	8,456	2,114
107	3,872	22	431	968	3,872	1,291
108	3,985	27	1,328	3,985	1,993	1,328
109	5,523	30	2,762	5,523	2,762	1,841
110	7,577	28	1,025	7,577	3,789	3,789
111	3,212	25	X	3,212	3,212	1,071
112	4,009	31	1,002	4,009	4,009	2,005
113	3,960	26	792	1,980	3,960	1,320
114	3,720	31	930	1,860	3,720	930
115	3,784	28	946	3,784	3,784	1,892
116	4,301	27	478	4,301	4,301	2,151
117	3,547	36	1,182	X	3,547	3,547
118	4,734	28	1,578	2,367	4,734	1,184
119	3,664	24	916	1,832	3,664	1,221
120	4,995	27	999	X	4,995	1,665
121	8,138	24	814	814	4,069	1,628
122	3,952	21	988	1,976	3,952	1,976
123	3,617	25	517	X	3,617	3,617
124	4,600	21	575	X	4,600	1,533
125	8,074	21	1,153	X	4,037	1,346
126	5,334	26	1,067	2,667	5,334	2,667
127	5,294	27	1,059	5,294	5,294	1,765
128	6,319	23	790	1,580	6,319	1,264
129	3,212	25	803	X	3,212	1,071
130	7,949	28	994	2,650	7,949	1,987
131	3,320	24	553	1,660	3,320	1,660
132	3,867	25	552	1,934	3,867	1,934
133	8,673	21	723	2,891	8,673	1,239

TABLE 7 (*Continued*)

City	Pupil Membership	Pupils per Teacher	Pupils per Supervisor	Pupils per Nurse	Pupils per Attendance Officer	Pupils per Office Employee
134	4,187	21	698	837	4,187	1,396
135	4,385	24	626	4,385	4,385	2,193
136	4,512	27	1,128	4,512	4,512	2,256
137	5,220	26	653	5,220	5,220	2,610
138	5,231	29	872	5,231	5,231	1,744
139	2,290	22	382	2,290	1,145	1,145
140	6,058	29	3,029	6,058	6,058	3,029
141	10,169	31	1,695	10,169	10,169	2,542
142	3,430	26	1,715	3,430	3,430	1,715
143	6,329	25	3,165	X	6,329	2,110
144	3,430	21	572	3,430	3,430	1,143
145	3,142	27	1,571	3,142	3,142	1,571
146	5,748	21	523	X	5,748	1,150
147	8,907	26	1,273	2,258	4,454	2,969
148	8,500	19	1,700	1,700	8,500	2,125
149	4,535	29	648	4,535	4,535	2,268
150	6,774	24	753	2,258	6,774	1,355
151	5,431	18	776	1,810	5,431	1,086
152	7,697	25	1,924	3,849	3,849	1,539
153	5,559	22	1,112	1,390	2,780	1,390
154	4,672	22	667	2,336	2,336	934
155	5,105	25	729	5,105	5,105	2,553
156	3,903	23	488	1,952	1,952	976
157	5,912	20	493	1,478	5,912	845
158	4,138	26	690	4,138	4,138	1,035
159	6,890	23	2,297	6,890	6,890	1,378
160	8,290	28	1,382	8,290	8,290	2,073
161	5,317	22	886	2,658	5,317	2,658
162	5,824	27	1,165	2,912	5,824	2,912
163	4,685	26	1,562	2,343	4,685	1,562
S.D.		9	1,000	1,830	2,254	1,005
Mean	5,278	23.47	1,084	2,634	4,158	1,958
Range		16 to 43	353 to 6,192	648 to 10,169	1,145 to 10,169	449 to 6,734

.40; as being "markedly" present when r ranges from .35 or .40 to .50 or .60; and as being "high" when r is above .60 or .70.

The interpretation of the significance of an r is generally made by taking into account the probable error of the r. The statistical probable error of r is determined by a formula which assumes that the number of cases of the different traits or

TABLE 8

NUMERICAL RELATIONSHIP OF PUPIL MEMBERSHIP AND POPULATION, PUPIL MEMBERSHIP AND NUMBER OF CERTAIN CLASSIFIED EMPLOYEES, AND BETWEEN CERTAIN CLASSIFIED EMPLOYEES AND OTHER CLASSIFIED EMPLOYEES FOR 22 MASSACHUSETTS CITIES, 163 CITIES EXCLUSIVE OF MASSACHUSETTS CITIES, AND 185 CITIES INCLUDING MASSACHUSETTS CITIES

PUPIL MEMBERSHIP AND POPULATION	(r 3.2)	VALUE OF r	P.E.	RATIO
Twenty-Two Massachusetts Cities		.87	.0393	22.0
One-Hundred Sixty-Three Cities..		.70	.0285	25.0
One-Hundred Eighty-Five Cities..		.72	.0239	30.0
PUPIL MEMBERSHIP AND NUMBER OF NURSES	(r 3.6)	VALUE OF r	P.E.	RATIO
Twenty-Two Massachusetts Cities		.69	.0753	9.6
One-Hundred Sixty-Three Cities..		.41	.0439	9.4
One-Hundred Eighty-Five Cities..		.43	.0405	10.6
PUPIL MEMBERSHIP AND NUMBER OF SUPERVISORS	(r 3.5)	VALUE OF r	P.E.	RATIO
Twenty-Two Massachusetts Cities		.43	.1172	3.7
One-Hundred Sixty-Three Cities..		.26	.0493	5.3
One-Hundred Eighty-Five Cities..		.27	.0453	6.0
PUPIL MEMBERSHIP AND NUMBER IN OFFICE PERSONNEL	(r 3.8)	VALUE OF r	P.E.	RATIO
Twenty-Two Massachusetts Cities		.44	.1160	3.8
One-Hundred Sixty-Three Cities..		.50	.0399	12.5
One-Hundred Eighty-Five Cities..		.48	.0384	12.5
NUMBER OF SUPERVISORS AND NUMBER OF TEACHERS	(r 5.4)	VALUE OF r	P.E.	RATIO
Twenty-Two Massachusetts Cities		.44	.1160	3.8
One-Hundred Sixty-Three Cities..		.37	.0455	8.0
One-Hundred Eighty-Five Cities..		.36	.0434	8.3
NUMBER OF SUPERVISORS AND NUMBER IN OFFICE PERSONNEL	(r 5.8)	VALUE OF r	P.E.	RATIO
Twenty-Two Massachusetts Cities		.22	.1375	1.6
One-Hundred Sixty-Three Cities..		.52	.0385	13.0
One-Hundred Eighty-Five Cities..		.46	.0396	11.6

classes that are being compared represent a random sampling of an infinitely large number of such cases. "A random sampling of an infinite universe" is the expression used by statisticians.

In the present study, the cases studied are taken not from an

infinitely large number of cases (an "infinite universe"), but from a definitely known number of cases (a "finite universe") which constitute the total number of cases that could be studied. No formula has been devised up to the present time by which the probable error of an r for cases from a finite universe can be determined. The probable error of r as determined by the formula now used is too large for an r between cases taken from a finite universe.

Since in order to be reasonably certain that some correlation actually does exist, an r must be at least three to four times its probable error, and since we know that the probable errors for the several r's for Table 8 are too large, we need to be concerned here with the size of the P.E. only if the ratios between the r's and the P.E.'s are less than 4. All of the r's of the intercorrelations for Table 8 are positive and all of them indicate the presence of some degree of correlation. All of the ratios except one are significant, that is, the ratio being 4 or more, we are reasonably certain that some correlation does actually exist.

For the 22 Massachusetts cities, the r between number of supervisors and number in the administrative office personnel is only .22, while for the 163 cities it is .52, and for the 185 cities it is .46. For the 185 cities and the 163 cities the ratio is 11.6 and .13, respectively, while for the 22 cities it is only 1.6. The determining of the reliability of the correlation between number of supervisors and number of employees in the office personnel by dividing the r by its P.E. seems to indicate that we cannot be reasonably certain that any correlation actually exists because the ratio is far below 4. We must remember, however, that the 22 cases represent 85 per cent of all the cases in a finite group and that the P.E. is too large, and that since the formula for computing the P.E. or r has the square root of N in the denominator, the smaller the number of cases the larger is the P.E. In order to be certain that some correlation exists between number of supervisors and number in office personnel for the 22 cities, it is necessary to supplement the evidence presented by the r of .22, the P.E. of .1375, and the ratio of 1.6.

The 22 Massachusetts cities were ranked in orders of merit for number of supervisors and for number in office personnel. The Spearman "Footrule" formula for finding R was used, and

R was found to be .37. The r of the *ranks* of the 22 cities for number of supervisors and number in office personnel is .58, and while this r is not definitely comparable with the product-moment r, it nevertheless presents sufficient evidence of correlation to warrant the assumption that some correlation does exist.

The data for number of supervisors and number in office personnel for the 22 Massachusetts cities were put into a scatter diagram, and it was evident from inspection that there is some correlation. Two extreme cases were responsible for the small correlation, .22. These two extreme cases were now left out and the data for the 20 Massachusetts cities give the following statistical results:

$$r = .50 \quad \text{P.E. of } r = .1131 \quad \text{Ratio} = 4.4$$

From all of the considerations given the data, we are reasonably certain that there is actual correlation between number of supervisors and number in office personnel in the 22 Massachusetts cities.

Significant Differences between Present Practice in Regard to Number of Certain Classified Employees in 22 Massachusetts Cities and 163 Cities Outside of Massachusetts

The interpretation of Tables 4, 5, 6, and 7, to find out whether there is a significant difference between present practice in Massachusetts cities and in cities outside of Massachusetts in the matter of number of certain classified employees, can best be accomplished in terms of the average number of such employees compared with the average number of pupils.

The average of column 3 (pupils per teacher) of Table 5 for 22 Massachusetts cities is 25.82 and the standard deviation of the distribution is 2.08. The average for the 163 cities is 23.47 and the standard deviation of the distribution is 8.76.

In order to be reasonably certain that there is a real difference greater than zero between the two means, the ratio (the quotient of the difference of the means divided by the standard deviation of the difference of the means) must be three or more.[8] In determining whether there is a significant difference between the

[8] Garrett, H. E., *Statistics in Psychology and Education*. Longmans, Green & Company, New York, 1927, p. 133.

average number of pupils per teacher for the 22 Massachusetts cities and for the 163 cities, the procedure is as follows:

Standard deviation of the means for 22 Massachusetts cities is

$$\frac{2.08}{\sqrt{22}} = .4435.$$

Standard deviation of the means for the 163 cities is

$$\frac{8.76}{\sqrt{163}} = .66$$

Standard deviation of the difference of the means is

$$\sqrt{(.4435)^2 + (.66)^2} = .79$$

Difference of the means $= 25.82 - 23.47 = 2.35$. $2.35 \div .79 = 3$. This is a significant difference.

In like manner the significance or lack of significance was determined for the difference of the means of columns 3, 4, 5, and 6 of Table 5 for the 22 Massachusetts cities and the 163 cities of Table 7.

The difference between the means of the number of pupils per teacher is a significant difference.

The difference between the means of the number of pupils per supervisor is a significant difference.

The differences of the means of columns 4, 5, and 6, the number of pupils per nurse, the number of pupils per attendance officer, and the number of pupils per office personnel employee are not significant differences.

Where the differences of the means are significant differences, the significance of the difference simply means that there actually is a numerical difference which cannot be wiped out by errors of sampling. So far there is nothing in our calculations, nor in the statistical conclusions, to tell us whether the difference between the means of the number of pupils per teacher and the means of the number of pupils per supervisor in the 22 Massachusetts cities and the 163 cities indicates better or worse administration practice in the case of the 22 Massachusetts cities or the 163 cities.

An analysis of the data, beyond statistical analysis, is necessary before we can draw conclusions as to which practice is the better practice, and also whether the present practice in either group of cities is good practice. The difference in number of pupils per teacher is too small to warrant any other conclusion regard-

ing the implication of educational outcomes other than that a difference as small as this would not have a detrimental effect.

All studies that have been made regarding the effect of class size on pupil achievement have been made on the basis of small classes compared with large classes, with a much larger difference between average size of classes than is here represented. The conclusions [4] warrant the assumption that a difference of two or three within classes as small as 23 to 25 would not be detrimental.

The only remaining basis for comparison is the financial comparison. The average number of pupils for the 185 cities included in this study is 5,291. For a city of that size the number of teachers required, if the average number of pupils per teacher in the 163 cities were used as a basis, would be 221. Using as a basis the number of pupils per teacher in the Massachusetts schools, the number of teachers would be 204. The difference is 17 teachers. The average salary of elementary public school teachers in the United States in 1926 for a city having this number of pupils was $1,600.[5] For a city having 5,291 pupils, Massachusetts' practice in regard to the number of pupils per teacher would represent a financial economy of approximately $21,000.

The administration significance of the difference between the means of pupils per supervisor for the 22 Massachusetts cities and the 163 cities may be considered from the point of view of the educational implications involved.

It has been demonstrated through educational experimentation that supervision improves the educational outcomes and that supervision is a financial economy in that it reduces pupil failures and increases the quality and quantity of educational outcomes.[6] In the present study, the "number of supervisors" includes supervisors of special subjects, of health, of physical education, of atypical classes of adult alien education, of continuation schools, directors of research, general supervisors and assistant superintendents in charge of supervision of instruction. One general supervisor, a director of research, a supervisor of atypical classes, one supervisor each for art, music, health,

[4] Stevenson, P. R., *Smaller Classes or Larger.* Public School Publishing Company, Bloomington, Illinois, 1923.

[5] National Education Association, *Research Bulletin*, Vol. VII, No. 3.

[6] Pittman, M. S., *The Value of Supervision.* Warwick and York, Baltimore, Maryland, 1921.

manual arts, household arts, and two for physical education represent a supervisory staff of 10, and represent a *minimum* number for desirable practice. The Massachusetts average number of 8.14 supervisors comes nearer the desirable number than the average of 5.93 for the 163 cities. The ratio of number of school nurses to number of pupils is not close to desirable practice in either the group of 22 Massachusetts cities or the 163 other cities.[7] In the 22 Massachusetts cities the number of pupils per nurse is 2,331 and in the 163 cities it is 2,237 for those cities in which there are school nurses. There are, however, in this group, 20 cities in which there are no school nurses. The number of pupils per nurse in the cities which have school nurses, exclusive of the Massachusetts cities, is 2,587. The average number of pupils per attendance officer in the Massachusetts cities is 5,059 and in the 163 cities it is 4,108; for the 185 cities it is 4,266. The figures represent pupil membership in the public schools. The average for each group of cities is below the standard set up by Emmons.[8]

The average number of pupils per administration office employee is 2,005 for the Massachusetts cities, 1,909 for the 163 cities, and 1,964 for the 185 cities. Only 3, or 14 per cent, of the Massachusetts cities provide clerks for the attendance officers. Only 2, or 10 per cent, provide clerks for the supervisory staff. Seventy-seven per cent of the superintendents of schools in the 22 Massachusetts cities reported that their clerical staff was too small. Since there is no significant difference between the average number of pupils per office employee in the three groups of cities, it is reasonable to conclude that the number of administration office employees is inadequate for the last two groups as well as for the Massachusetts group.

Summary and Conclusions

1. The difference between the average number of pupils per teacher for the 22 Massachusetts cities and for the 163 cities exclusive of the Massachusetts cities is a significant difference.

2. From a financial point of view, this difference represents

[7] The Division of Field Studies, Institute of Educational Research, Teachers College, Columbia University, sets up a standard of one school nurse to 1,200 to 1,500 pupils.

[8] Emmons, F. E., *op. cit.*

better practice in Massachusetts than in the 163 cities, and the difference represents no implications of inferior educational outcomes.

3. From this study we are not able to conclude what the number of pupils per teacher should be.

4. The difference between the means of the number of pupils per supervisor is a significant difference.

5. This difference represents better practice in the Massachusetts cities.

6. The average number of supervisors in both groups of cities is too small.

7. The difference between the means of the average number of pupils per school nurse is not a significant difference.

8. In each group of cities the average number of nurses is too small.

9. The difference between the means of the average number of pupils per attendance officer is not a significant difference.

10. In each group of cities the ratio of number of pupils per attendance officer is too large.

11. The difference of the means of number of pupils per administrative office employee is not a significant difference.

12. The average number of administrative office employees is too small in each group of cities.

CHAPTER IX

RELATIONSHIPS IN THE ADMINISTRATIVE AND SUPERVISORY ORGANIZATIONS

Rugg[1] regards correlation as "negligible" when r is less than .15 to .20; as "low" when r ranges from .15 or .20 to .35 or .40; as "marked" when r ranges from .35 or .40 to .50 or .60; and as "high" when r is above .60 or .70. However, "low" or "high" correlation coefficients do not of necessity mean low or high agreement or relationship.[2]

Referring to Tables 4 and 6, common sense tells us that there would very likely be a high degree of relationship or correlation between pupil membership and size of population, and that the relationship would be fairly constant. Table 8 shows us that the r is .87 for the 22 Massachusetts cities and that for the 163 cities outside of Massachusetts it is .70. We know that the relationship between these two elements is bound to be rather high and fairly constant because of the kind of relationship. A city of 50,000 population is certain to have a larger pupil membership than a city of 20,000. In the case of the other r's of Table 8, although we may be able to decide with practical certainty that some relationship exists, we are not able to tell from the r, nor from the ratio of r to the P.E. of r, whether the relationship is high or low, or how constant it is.

Kelley[3] has designated the radical $\sqrt{(1 - r^2)}$ the coefficient of alienation, which is called k. It measures the *absence* of relationship in much the same way that r measures the *presence* of relationship. The peculiar value of k lies in the fact that it indicates rather closely the constancy of relationship between two variables. The greater the value of k the less constant is the relationship. If relationship is high and constant, it is pos-

[1] Rugg, H. O., *Statistical Methods Applied to Education.* Houghton Mifflin Company, New York, 1917, p. 256.

[2] Holzinger, K. J., *Statistical Method for Students in Education.* Ginn and Company, 1928, p. 163.

[3] Kelley, T. L., "Principles Underlying the Classification of Men," *Journal of Applied Psychology,* 1919, Vol. III, 1, p. 50.

sible to predict fairly closely the value of one variable when the value of the other variable is known. If, on the other hand, k is large, the prediction of the unknown variable from the known variable is but little better than a guess because the relationship is not constant, or orderly. The haphazard relationship between number of pupils and number of supervisors as shown in Table 7 is a good example of what is meant by lack of constant relationship, even where correlation is "markedly" present as a general relationship for the whole distribution of cases.

Table 9 shows among other things the degree of constancy of relationship between number of pupils and number of certain classified employees, and the degree of constancy of relationship

TABLE 9

CORRELATIONS AND INTERCORRELATIONS BETWEEN NUMBER OF PUPILS AND NUMBER OF CERTAIN CLASSIFIED EMPLOYEES; THE VALUE OF k; AND THE DEGREE OF CONSTANCY OF RELATIONSHIP FOR 22 MASSACHUSETTS CITIES, 163 CITIES EXCLUSIVE OF MASSACHUSETTS CITIES, AND 185 CITIES INCLUDING MASSACHUSETTS CITIES

CITIES	r *	VALUE OF r	VALUE OF k	CONSTANCY
22 Massachusetts Cities	3.2	.87	.5000	.50
163 Cities	3.2	.70	.7141	.29
185 Cities	3.2	.72	.6913	.31
22 Massachusetts Cities	3.6	.69	.7226	.28
163 Cities	3.6	.41	.9115	.09
185 Cities	3.6	.43	.9015	.10
22 Massachusetts Cities	3.5	.43	.9015	.10
163 Cities	3.5	.26	.9703	.03
185 Cities	3.5	.27	.9617	.04
22 Massachusetts Cities	3.8	.44	.8963	.10
163 Cities	3.8	.50	.8160	.13
185 Cities	3.8	.48	.8761	.12
22 Massachusetts Cities	5.4	.44	.8963	.10
163 Cities	5.4	.37	.9277	.07
185 Cities	5.4	.36	.9285	.07
22 Massachusetts Cities	5.8	.22	.9766	.02
163 Cities	5.8	.52	.8428	.16
185 Cities	5.8	.46	.8862	.11

* $r_{3\text{-}2}$ is the correlation between columns 3 and 2, pupil membership and population of Tables 3 and 5; $r_{3\text{-}6}$ is the correlation between pupil membership and number of nurses; $r_{3\text{-}5}$ between pupil membership and number of supervisors; $r_{3\text{-}8}$ between pupil membership and number in office personnel; $r_{5\text{-}4}$ between number of supervisors and number of teachers; and $r_{5\text{-}8}$ between number of supervisors and number in office personnel.

between number of certain classified employees and certain other classified employees.

Knowing either of the two variables of $r_{3.2}$ (pupil membership or population) for any one of the 22 Massachusetts cities, the prediction of the other variable is only half-way between accuracy and a guess. In other words, k .50 for $r_{3.2}$ indicates a constancy of relationship between the number of pupils and the size of the city which is only half-way between perfect constant relationship and a guess of relationship.

Although correlation, when it does exist between two variables, does not necessarily show causation, and although the presence of a constant relationship does not necessarily show causation, nevertheless, in a problem involving relationship and interrelationships of public school administrative organizations, *a high degree of absence of constant relationship is evidence of a lack of a common planned relationship.*

In addition to the evidence of lack of constancy of relationships shown in Table 9, we have the further evidence of the wide range of the distributions shown in Table 7. For instance, the range of number of pupils per supervisor in the 163 cities group is from 268 to 6,192; the range of number of pupils per school nurse is from 648 to 10,169; and the range of pupils per attendance officer is from 1,143 to 10,076. Even in the matter of pupils per teacher, where we would expect a considerable degree of constancy of numerical relationship, the range is from 16 to 43. In the Massachusetts cities the ranges are much less extensive.

Summary and Conclusions

1. In Massachusetts cities, in cities exclusive of Massachusetts cities, and in cities including Massachusetts cities, the relationship between number of pupils and number of supervisors is a haphazard relationship. It is not a relationship based on common practice in planning.

2. The relationship between number of pupils and number of school nurses is a haphazard relationship. It is not a relationship based on common practice in planning.

3. The relationship between number of pupils and number of employees in the administration office personnel is a haphazard

relationship. It is not a relationship based on common practice in planning.

4. The relationship between number of supervisors and number of employees in the administration office personnel is a haphazard relationship. It is not a relationship based on common practice in planning.

5. The relationship between number of supervisors and number of teachers is a haphazard relationship. It is not based on common practice in planning.

6. In determining the number of classified employees in the administrative and supervisory organizations of city school systems, present practice makes but little use of common administrative planning.

Tables 4, 5, 6, and 7 show the range in number of classified employees and the range of number of pupils per employee. The ranges are so extensive that they constitute weighty evidence in support of the conclusions drawn from the statistical treatment of the data.

CHAPTER X

FACTORS THAT DETERMINE THE TYPE OF ADMINISTRATIVE AND SUPERVISORY ORGANIZATIONS

There are several factors which determine the type and, to a considerable extent, the effectiveness of the administrative and supervisory organizations of city school systems. A study of school laws, school surveys, and the data involved in the present study, leads to the above conclusion.

The factors which determine the type and, to a considerable extent, the effectiveness of the organizations are:

1. *State school laws including city charters.*

In Massachusetts the Municipal Finance Act of 1913 makes Massachusetts city school systems fiscally dependent. On the other hand, 70 per cent of the cities outside of Massachusetts are fiscally independent. The control and maintenance of school buildings are vested in officials outside of the school department in 12 per cent of Massachusetts cities and in 2 per cent of the cities exclusive of the Massachusetts cities.

The control of health service including the appointment of nurses and physicians is vested in a board outside of the school department in 45 per cent of the Massachusetts cities and in 8 per cent of the cities exclusive of the Massachusetts cities.[1]

In New Jersey the state law requires that there be a secretary of the board of education.

New York provides by law that the superintendent of schools shall be the chief executive officer of the board of education,[2] and this makes the unit type [3] of organization mandatory. Pennsylvania [4] legalizes the multiple [5] type of organization.

[1] The per cents given here and in the paragraphs immediately following are those found in Table 3.

[2] See p. 29.

[3] See p. 18.

[4] See p. 30.

[5] See p. 19.

2. *Functions of the board of education.*

Recognition or lack of recognition by boards of education of what their own proper functions are.

In Newburgh, New York, prior to 1929 many of the functions performed by the Newburgh Board of Education properly belonged to the superintendent of schools.

3. *Superintendent of schools chief executive officer.*

Recognition or lack of recognition by the boards of education of the principle of educational administration, which requires that the superintendent of schools shall be the chief executive officer of the board and that all other administrative and supervisory officers shall be directly responsible to him or indirectly responsible to him through his assistants.

In 20 per cent of the city school systems, there is a business agent or manager of business affairs who is directly responsible to the board of education.

4. *School surveys.*

Caswell [6] in his study, *City School Surveys,* has shown that many city school systems that have had school surveys conducted by educational experts from outside the local school systems have changed their organizations as a direct result of the surveys.

5. *Leadership of the superintendent of schools.*

The investigator selected six cities in which the administrative and supervisory organizations were judged to be poor. The minute book of the board of education in each of these cities contained no evidence that the superintendent of schools had any plan or procedure to inform the board of what the schools were accomplishing or of the needs of the school system.

Likewise six cities were selected in which the administrative and supervisory organizations were judged to be outstanding by reason of the degree to which they conformed to established principles of public school administration. In each of these six cities the minute book of the board of education contained evi-

[6] Caswell, H. L., *City School Surveys.* Bureau of Publications, Teachers College, Columbia University, New York, 1929.

dence that the superintendent of schools had kept the board informed of the best practice in public school administration.

6. *Ability of the city to pay.*

There is a tendency, but by no means without exceptions, for the wealthier cities to have more adequate organizations within the limitations of state law. Brookline, Massachusetts, and Montclair, New Jersey, each have good organizations, and each ranks near the top in the amount of taxable wealth back of each public school pupil. It is impossible to differentiate the influence of factor number 6 (ability of the city to pay) from factor number 5 (leadership of the superintendent of schools).

7. *The plan of school organization, K–6–3–3, or other plan.*

There is a marked tendency in the school systems having the junior high school organization to have more specialists to supervise such subjects as art, music, household arts, and industrial arts. It is impossible, however, to differentiate the influence of factor 7 from factor 8.

8. *The educational needs of a city.*

The educational needs of a city are a factor in determining the administrative and supervisory organization of a city school system *when* the educational needs and the ability of the city to pay are determined by an analytical and scientific study of the school system and the city it serves. The Division of Field Studies of Teachers College, Columbia University, in making a survey of a school system, always conducts such a study before making recommendations as to the administrative and supervisory organization. On the other hand, there are many school systems in which the educational needs are little known to the school officials and therefore have little influence in determining what the organization shall be.

9. *The educational offerings of a school system.*

The educational offerings of a school system are a factor in determining the administrative and supervisory organization of a city school system *when* the educational offerings are determined by a scientific and analytical study of the school system, its educational needs, the degree to which those needs are being provided for, and the ability of the city to pay. The

Division of Field Studies of Teachers College, Columbia University, always follows this procedure in making recommendations as to what the organization should be.

10. *The efficiency and relative cost of the organization.*

The efficiency and relative cost of an administrative organization as compared with other possible types of organization represent factors in determining the organization *when* the efficiency and relative cost are determined by a scientific and analytical study of the local school system in the light of accepted principles of public school administration and supervision. This is the procedure always followed in a properly conducted survey of a school system. On the other hand, the efficiency and relative cost of one type of organization as compared with other types of organizations have little or no effect in determining the organization in some cities because some of the other factors (2, 3, 4, and 5) are not present in the particular situation.

Summary and Conclusions

1. There are ten factors which determine the type, and, to a considerable extent, the effectiveness of the administrative and supervisory organizations of city school systems.

2. The number and power of these ten factors which are present in different situations vary greatly. The factor of a particular state law which may have great influence in determining what the administrative and supervisory organization shall be in the cities of one state may be entirely absent in another state. Restrictions and requirements of the city charter which have great influence in determining the school system organization in one or more cities may be entirely absent in the case of other cities. The leadership of the superintendent of schools may be present in a marked degree in some cities and in only a slight degree in others.

A consideration of the facts presented in 1 and 2 leads to conclusions in 3 and 4.

3. It is not possible to devise an administrative and supervisory organization chart that will be suitable for all cities of between 20,000 and 50,000 population.

4. It is not possible to devise an organization chart that will

be suitable for all cities of practically the same population or of practically the same number of public school pupils.

Even though it may be possible to overcome the obstacles of state law and city charter restrictions, the factors of educational needs, educational offerings, ability of the city to pay, and the relative efficiency and cost of one type of organization as compared with other types are all factors which can be discovered for a particular city only by means of a scientific and analytical study of the school system of that city.

CHAPTER XI

TYPES OF ORGANIZATION

Practically all authorities in the field of public school administration have adopted the "line and staff" terminology in designating or explaining by means of charts the relationships and authority in the administrative and supervisory organizations.[1] Line officers are those officers whose authority is represented in a straight, unbroken vertical line. Line officers are responsible to and derive their authority from the officer or officers next in line above them. They have authority over and are responsible for the line officers next in line below them on the chart and they also have authority over the staff officers who are below them on the chart organization. A simple chart, Chart 1, is sufficient to show the meaning of the "line and staff" terminology.

A chart of an administrative and supervisory organization of a school system may show proper relationships and an adequate number of line and staff officers to provide for the educational needs of the school system, but such an organization does not insure good administration. Organization may be a pencil and paper affair, but *administration* is a matter of human relationships. Although the setting up of an administrative and supervisory organization does not guarantee good administration, it is nevertheless a fact that the establishment of a sound organization is a prerequisite for the best administration of a city school system.

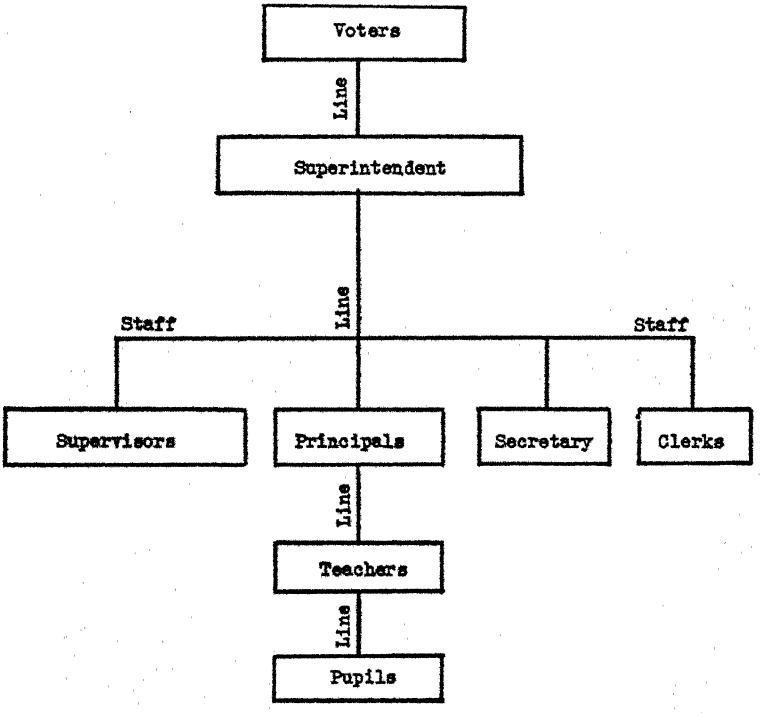
It has been shown in Chapter X that there are several factors which determine the administrative and supervisory organization of a city school system. It has been shown that these factors vary in strength and in number in the different cities. It has been shown that because of varying conditions, it is not possible to set up an organization, or a chart to represent an

[1] Engelhardt, N. L. and Engelhardt, Fred, *Public School Business Administration.* Bureau of Publications, Teachers College, Columbia University, New York, 1927, Chap. IV.

organization, that would be suitable for several different cities. Further evidence in support of this conclusion is found in the fact that in the many school survey reports made by the Institute of Educational Research of Teachers College, Columbia University, no two of the charts of recommended organizations are exactly alike, even though these organizations represented

CHART 1

LINE AND STAFF OFFICERS



by the charts are accompanied by recommendations that city charters or state laws be changed in order to make possible the proposed organizations.

The educational survey, when it is among the factors, is a strong factor in determining the administrative and supervisory organization. It is undoubtedly the strongest factor in determining what the organization should be, because, when it is

CHART 2

PROPOSED ORGANIZATION, PERTH AMBOY, NEW JERSEY

POPULATION—50,000

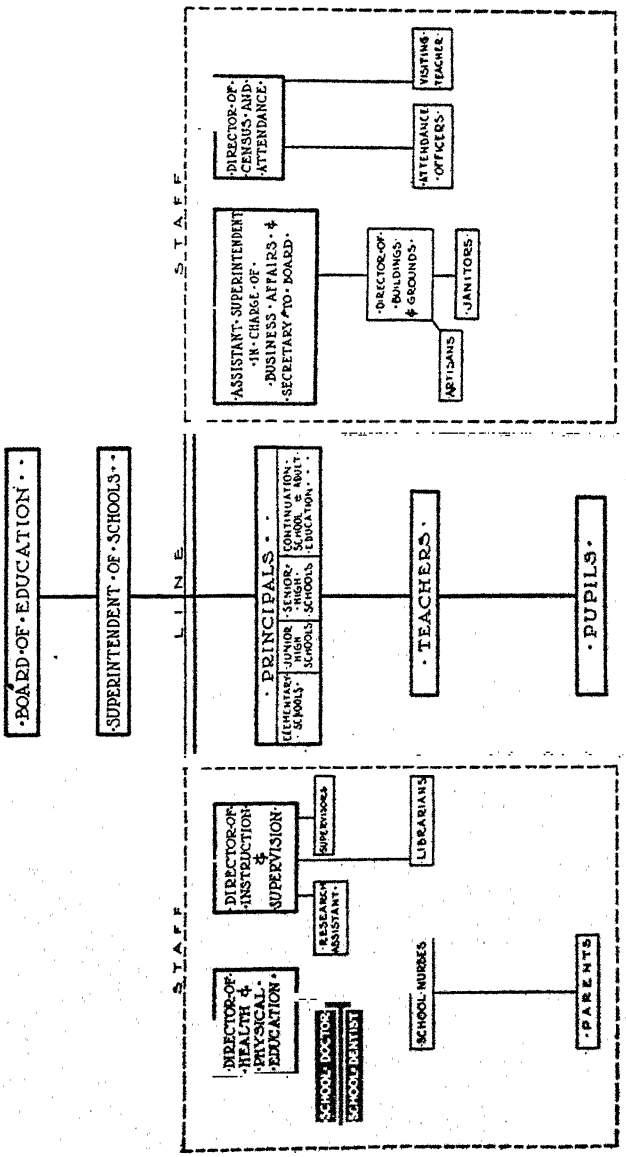


CHART 3

1928–1929 Organization, Perth Amboy, New Jersey

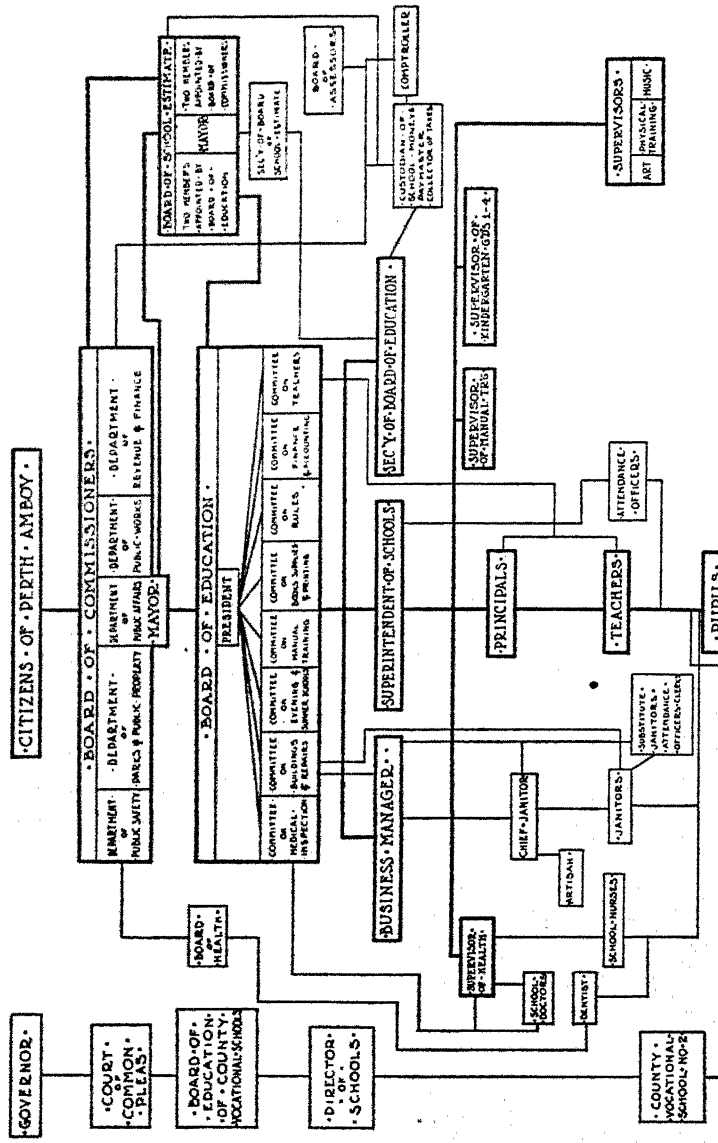


CHART 4

ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE GREENSBORO, NORTH CAROLINA, SCHOOLS
POPULATION—50,000

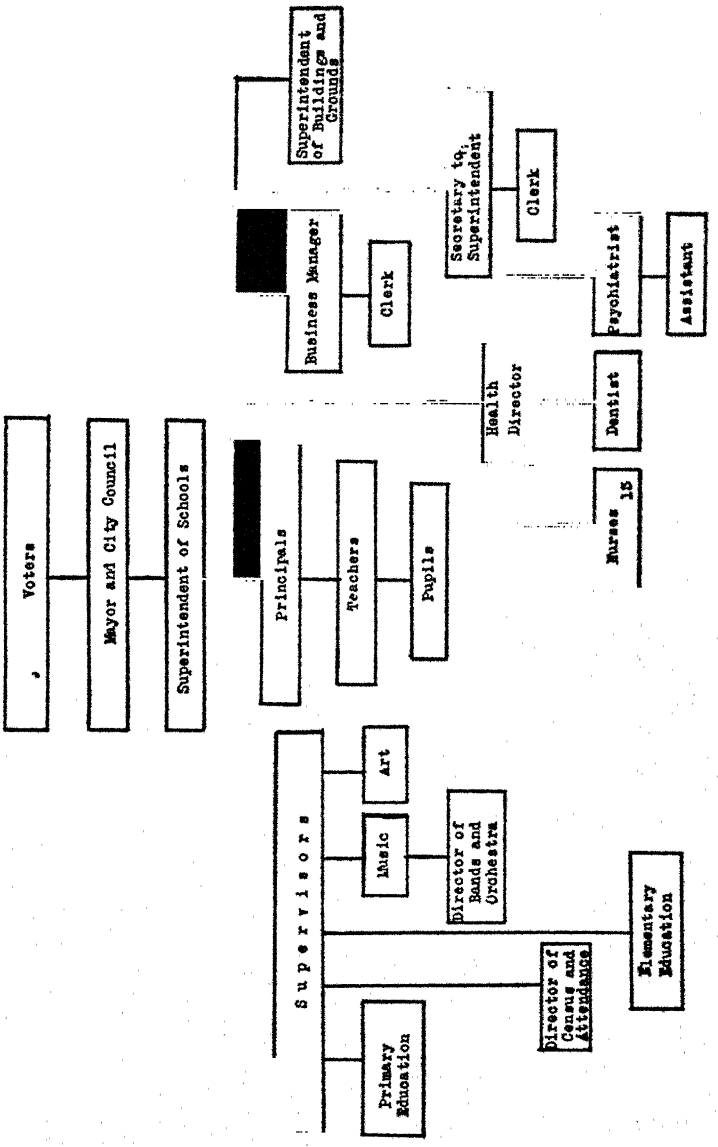


CHART 5

ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE SANTA MONICA, CALIFORNIA, SCHOOLS
POPULATION—38,000

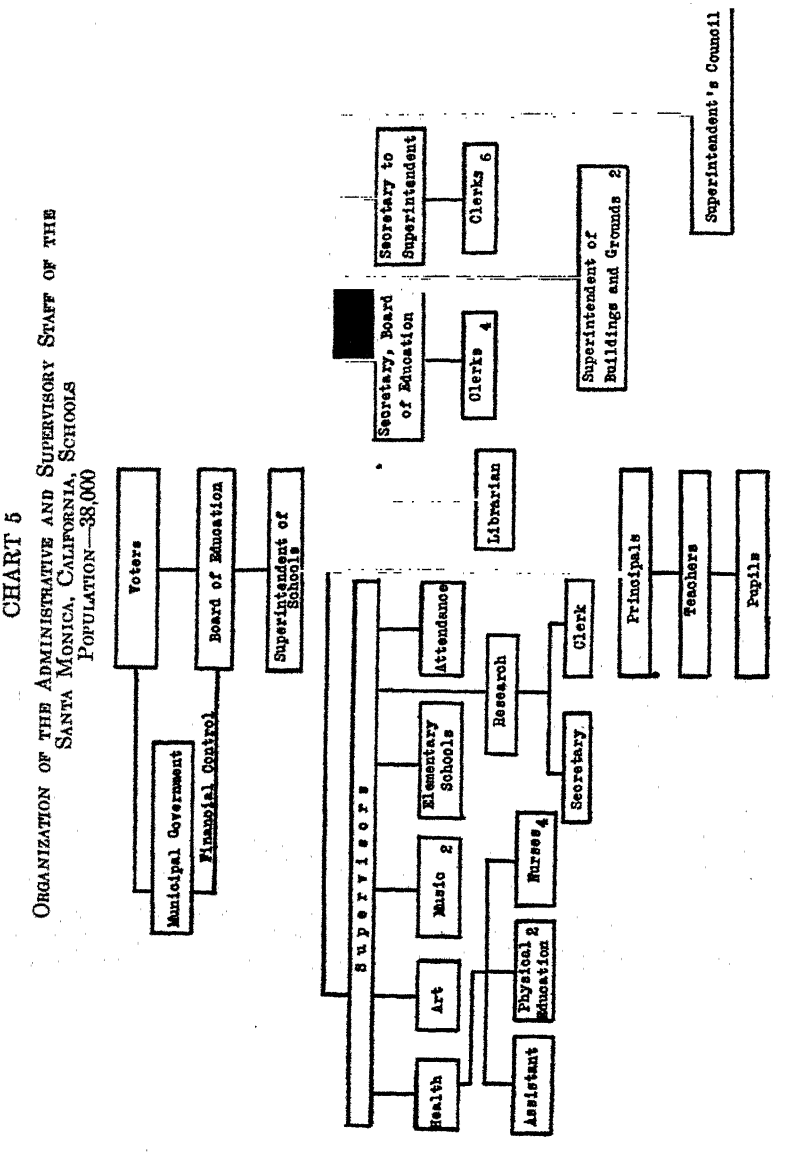


CHART 6

ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE NEW BRUNSWICK, NEW JERSEY, SCHOOLS
POPULATION—40,000

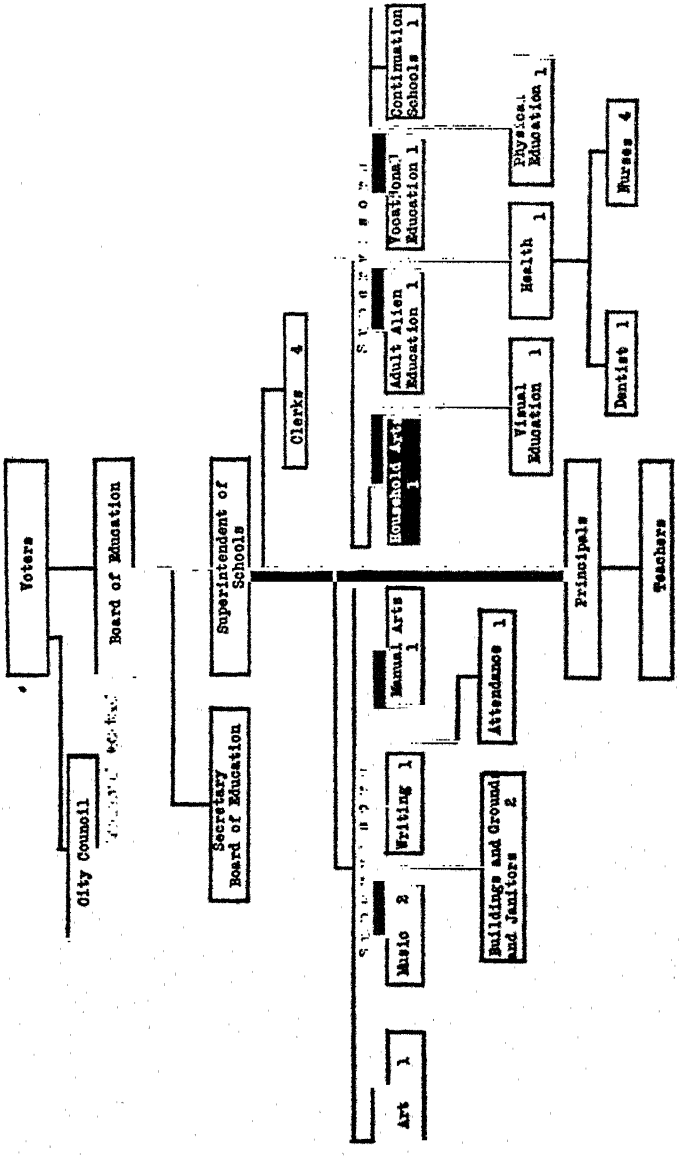


CHART 7

ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE POUGHKEEPSIE, NEW YORK, SCHOOLS
POPULATION—40,000

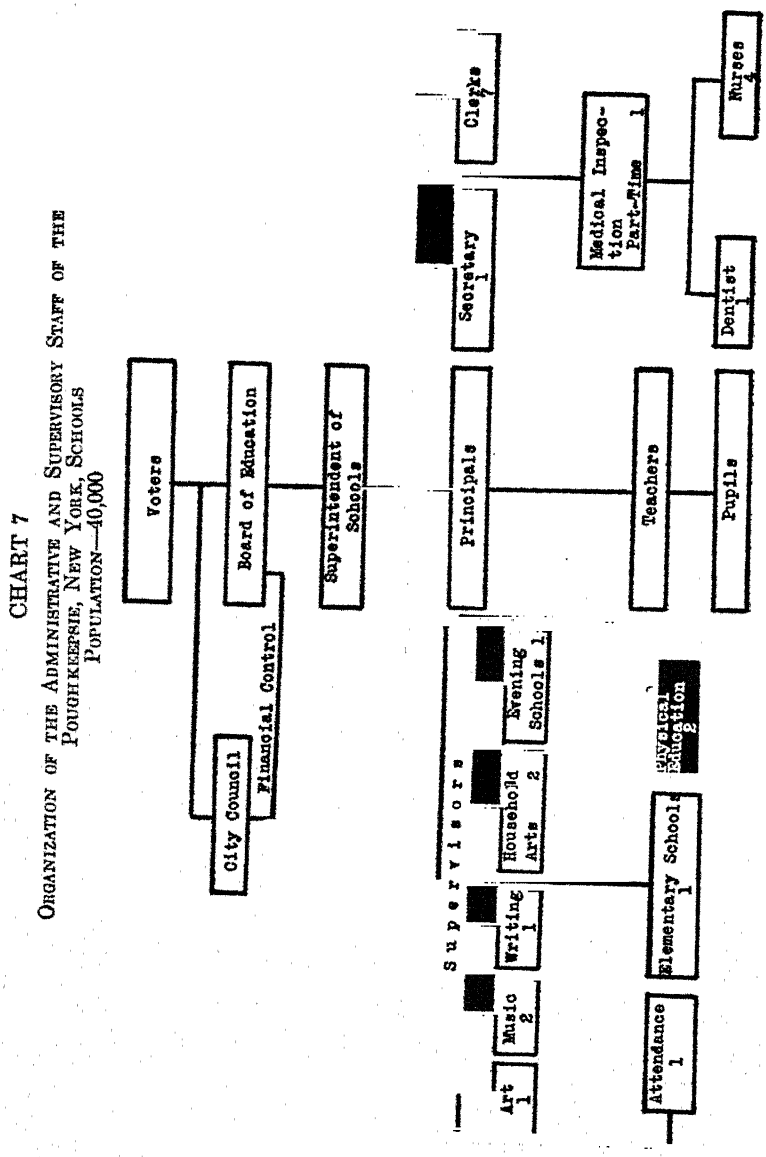


CHART 8

ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE REVERE, MASSACHUSETTS, SCHOOLS
POPULATION—36,000

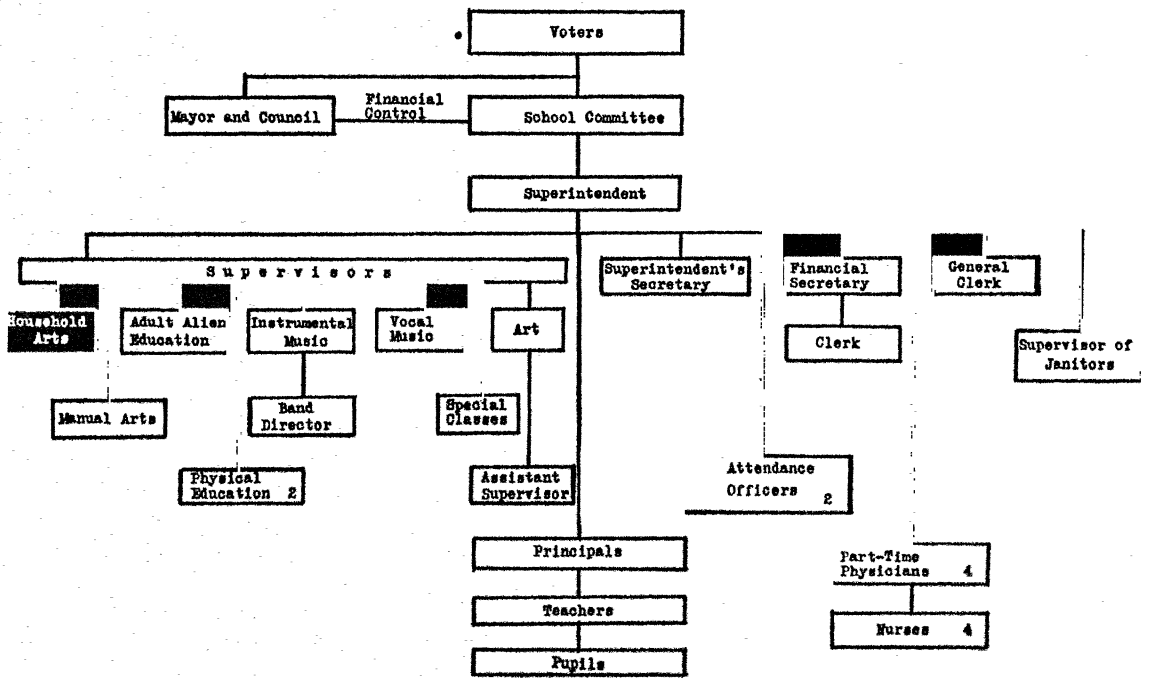


CHART 9

ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE MONTCLAIR, NEW JERSEY, SCHOOLS
POPULATION—34,000

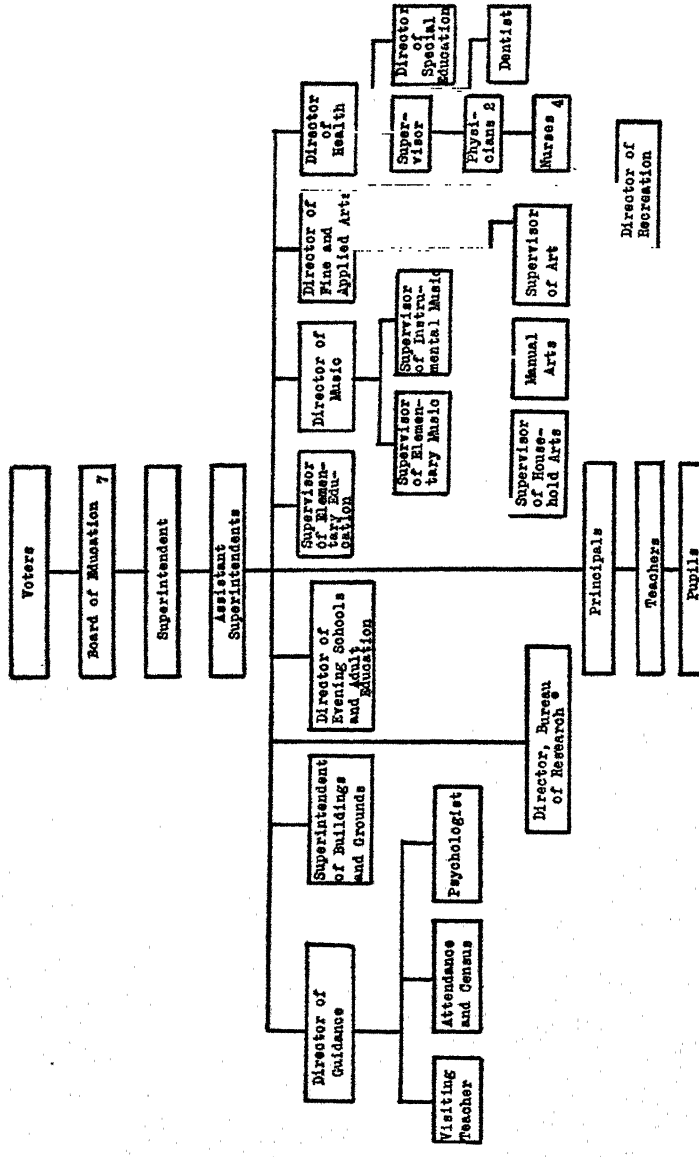


CHART 10

1928 ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE NEWBURGH, NEW YORK, SCHOOLS
POPULATION—33,000

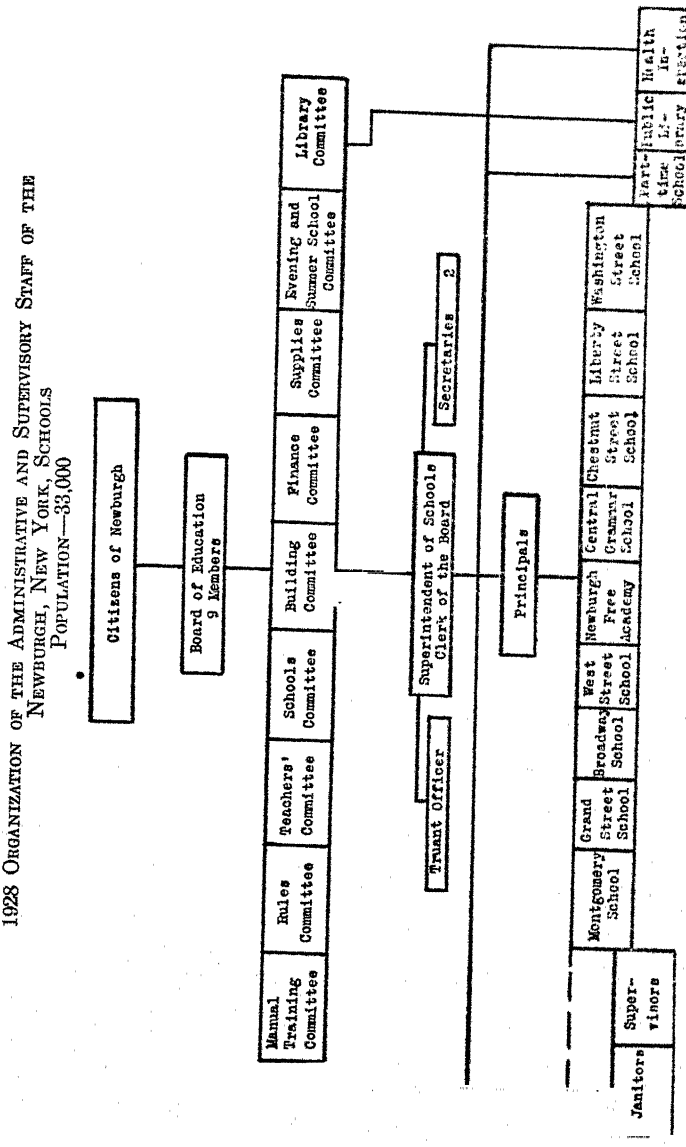


CHART 11

PROPOSED ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE NEWBURGH, NEW YORK, SCHOOLS
POPULATION—33,000

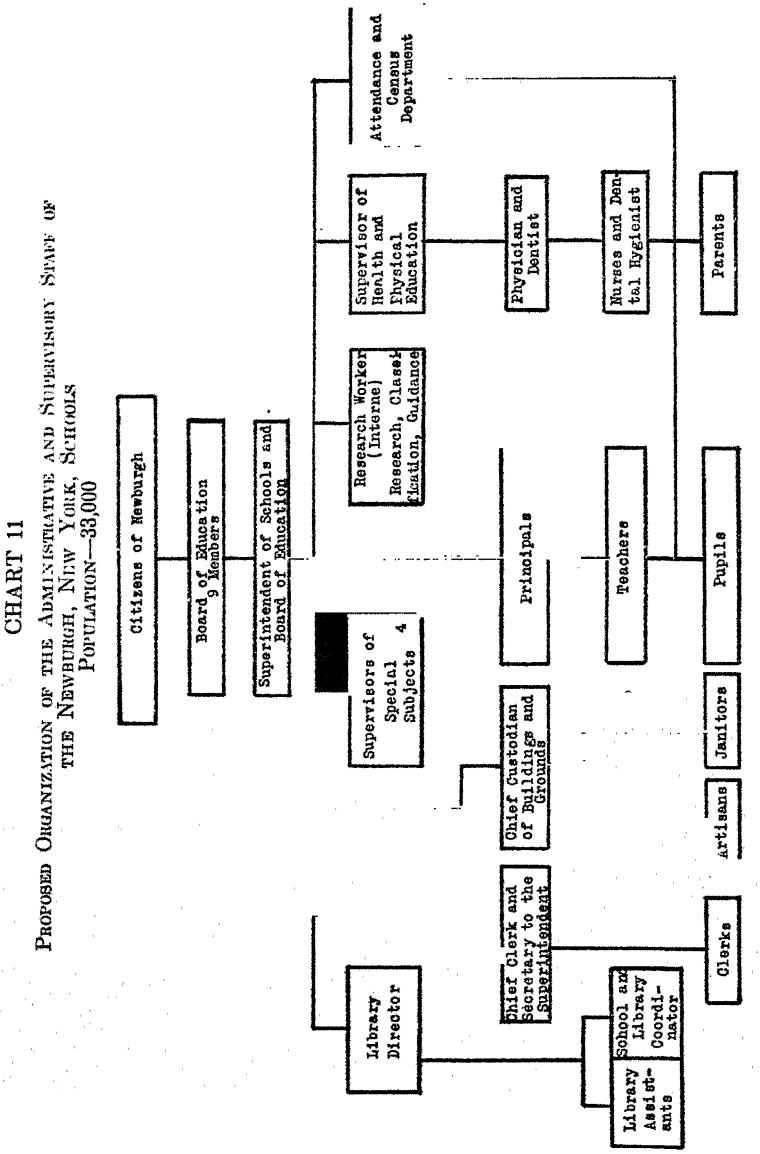


CHART 12

PROPOSED ORGANIZATION FOR THE ADMINISTRATION OF THE PORT ARTHUR, TEXAS, SCHOOLS
POPULATION—33,000

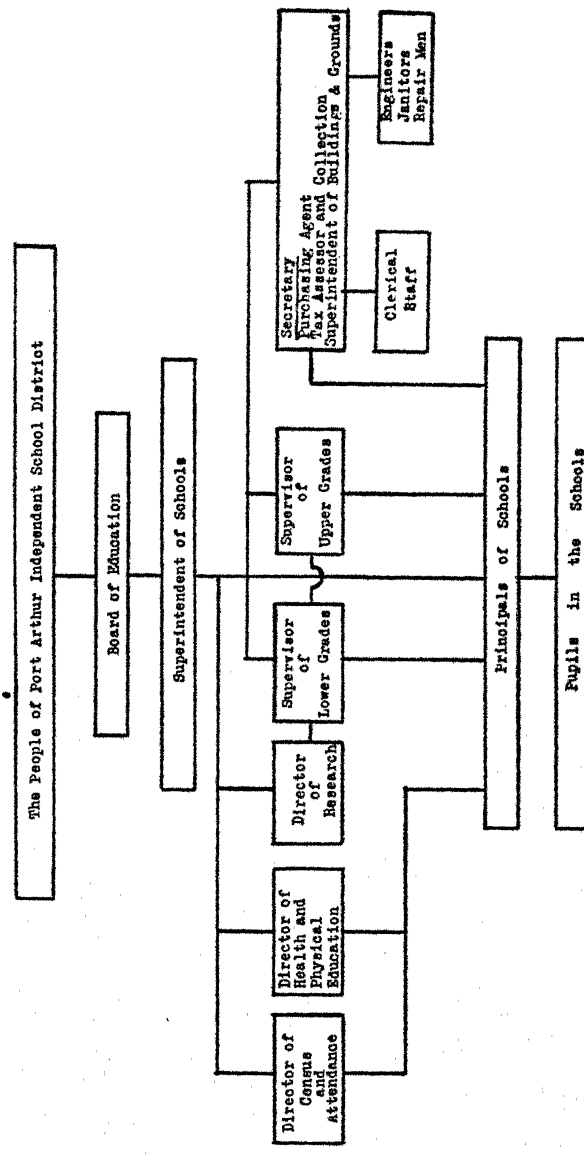


CHART 13

ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE WHITE PLAINS, NEW YORK, SCHOOLS
POPULATION—30,000

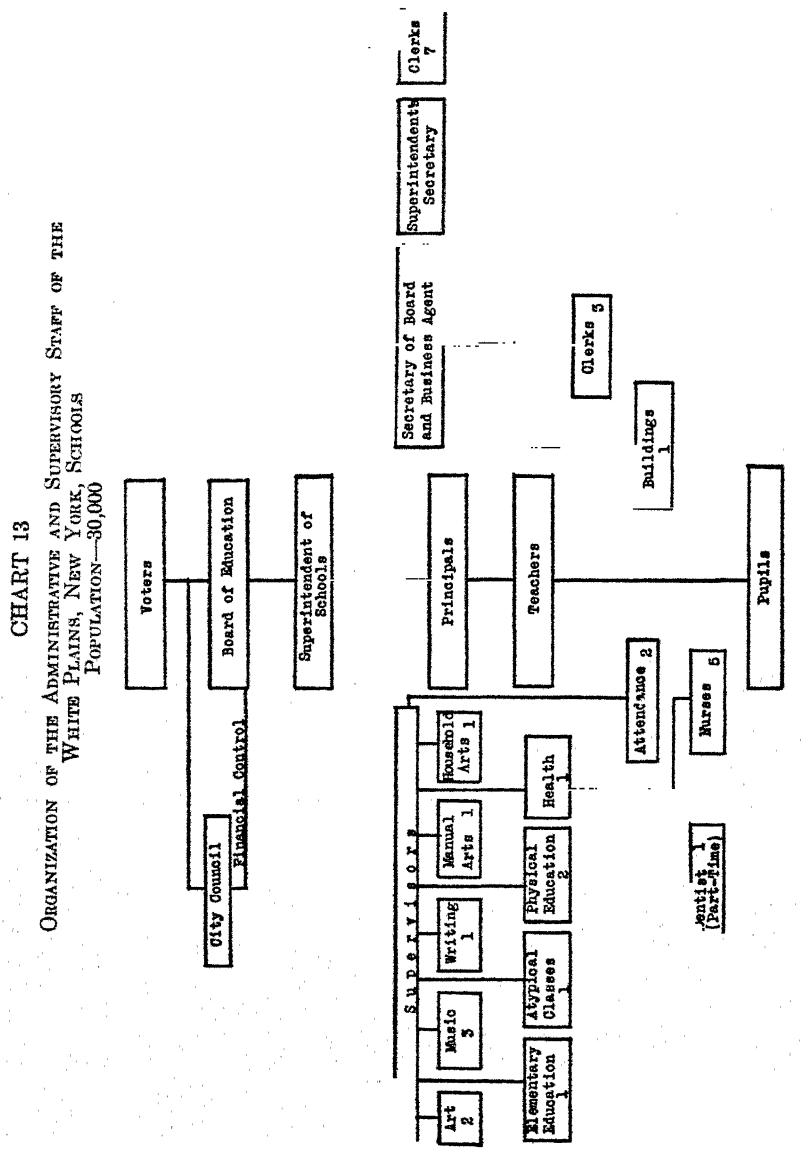


CHART 14

ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE WEST ORANGE, NEW JERSEY, SCHOOLS
• POPULATION—20,000

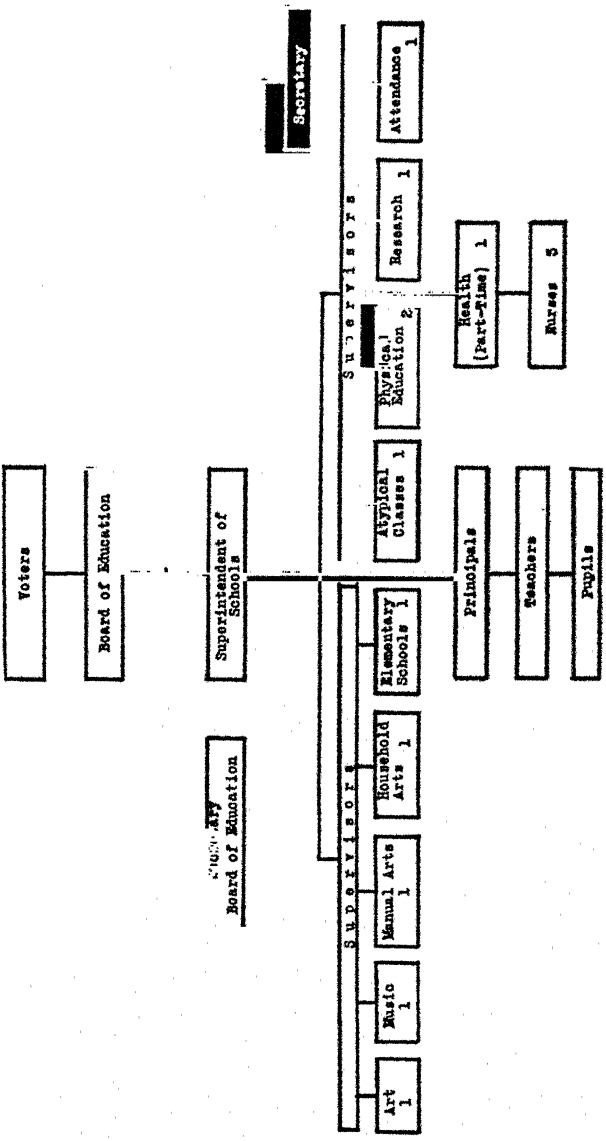


CHART 15

ORGANIZATION OF THE ADMINISTRATIVE AND SUPERVISORY STAFF OF THE ARLINGTON, MASSACHUSETTS, SCHOOLS
POPULATION—27,000

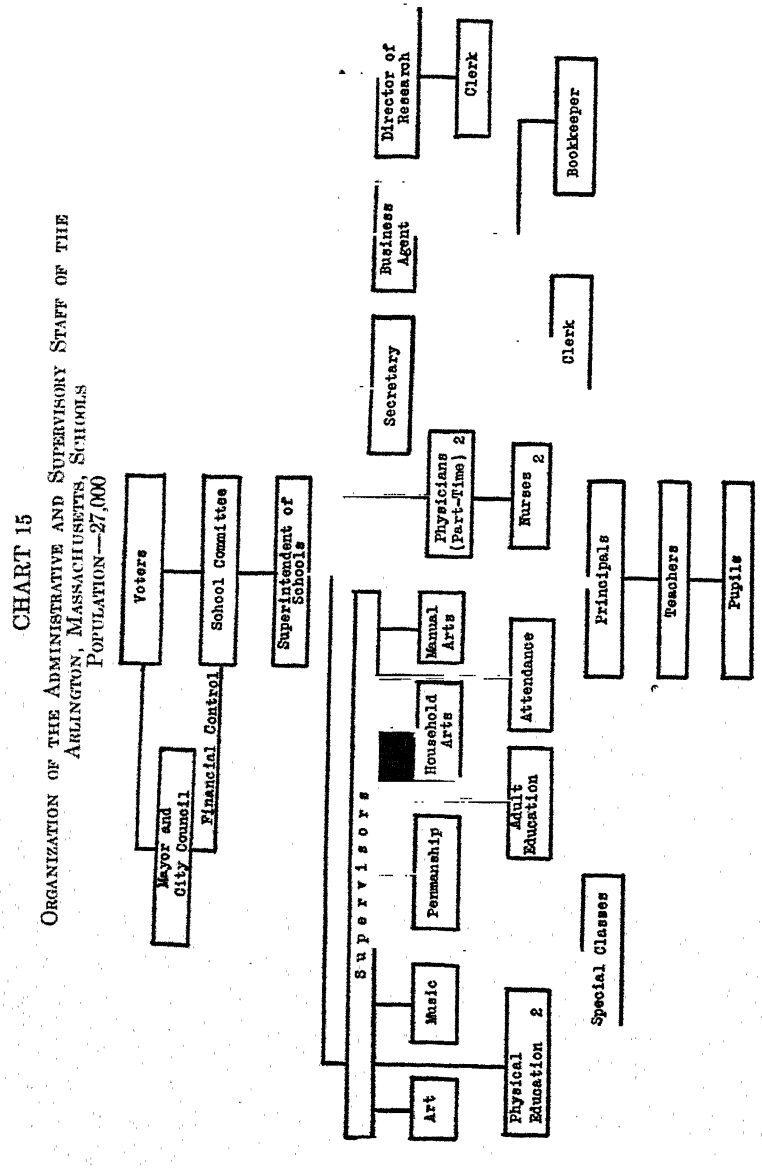


CHART 16

REVERE, MASSACHUSETTS, HIGH SCHOOL ORGANIZATION
1,559 PUPILS

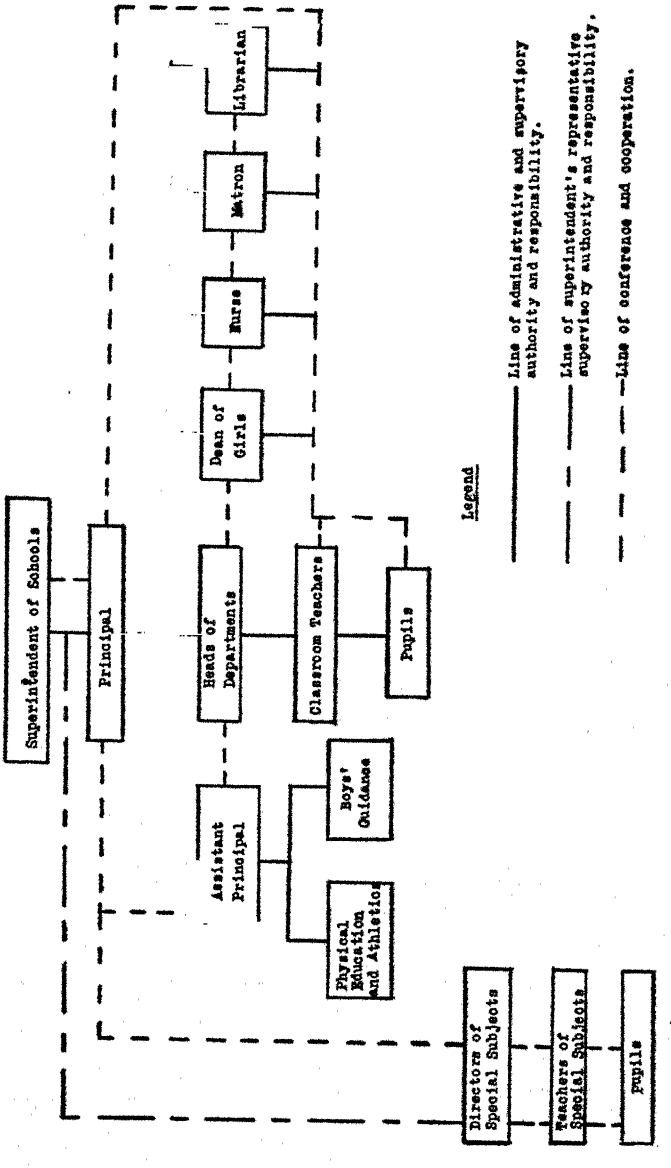
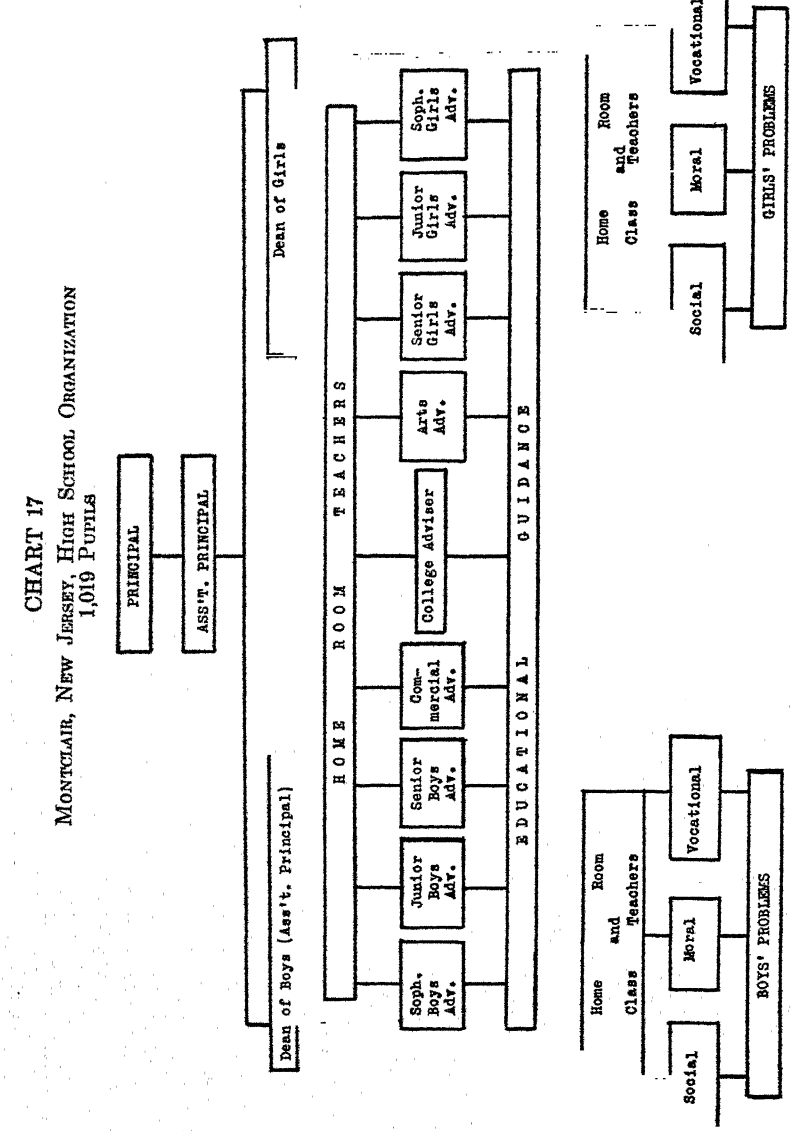


CHART 17

MONTCLAIR, NEW JERSEY, HIGH SCHOOL ORGANIZATION
1,019 PUPILS



present, it includes within itself a consideration of all of the other factors. It is not always possible, however, for the superintendent of schools to have the factor of a comprehensive educational survey. But if there is no survey by educational experts from outside the local school system, any proposed change in the organization should be made only after such a survey as the superintendent and his staff can make. After it has been determined what the educational offerings are to be, then, and not until then, can it be determined what the administrative and supervisory organization should be. But even the determining of the educational offerings in terms of the curriculum is by no means all that is necessary as a preliminary to setting up the organization. The educational philosophy of the superintendent of schools enters into the situation, and also his conception and understanding of the value of supervision. For instance, the educational offerings of the curriculum may include provision for atypical children in special classes, but whether or not there shall be a supervisor of such special classes is not determined automatically. So far as the superintendent of schools is concerned, this question is determined by his educational vision, his understanding of educational principles, and his leadership.

It has been shown that an administrative and supervisory organization that is best for a given city may not be suitable to meet the needs and requirements of another city. An organization that is entirely desirable and at the same time required to meet the needs of one city may be just as desirable in another city, but at the same time may not be so necessary as to offset the influence of the factor of a comparatively small amount of taxable wealth.

The amount and quality of education, beyond that required by law, which an American family provides for its boys and girls, are determined to a considerable extent by the financial ability of the family, by the desire for education, and the willingness of the family to pay for it. In the case of many school systems, the conditions are similar to those of the family. The influence of the factor of comparatively small taxable wealth is often overcome by a willingness to pay higher taxes for good schools. The lack of a desirable organization is often due, as shown by school sur-

veys, to the fact that neither the public nor the school officials know what a desirable organization is, or that the type of organization determines to a considerable extent the quality of the educational service performed by the school system.

It is sometimes claimed that a sound administrative and supervisory organization is a means of financial economy. Fair-mindedness and common sense compel us to the conclusion that such is not the fact in most cases. The cost of day schools per pupil in average membership in Montclair, New Jersey, not including capital outlay and debt service, for the year ending June 30, 1928, was $167.48. For the thirty-nine cities in Massachusetts, the amount expended per pupil in average membership for the same year was $100.19. Data for the cities of the United States are not available, but in all previously compiled data the Massachusetts per pupil expenditure has been considerably higher than for the country at large.

All in all, the amount and the quality of educational service that a community demands of its school system largely determines the amount paid for such service. If the most important function of public school administration were to keep expenditures as low as possible, the elimination of certain subjects not required by law, non-provision for good supervision, inadequate attendance service, poor teaching, and inadequate health service would reduce public school attendance and thus reduce public school expenditures. On the other hand, if public school education is as good as or better than private school education, public school attendance will increase, and, consequently, public school expenditures will increase.

A very important function of administration, however, is the elimination of waste. Public school waste in general is of two kinds—educational waste and financial waste. The administrative and supervisory organization is concerned with the elimination of each type of waste. It is the particular function of the business administration to be concerned with the elimination of financial waste. It is the duty of administration to see to it that every position in the school system is filled by a person who is competent in terms of the work to be done, and that the work to be done is properly allocated. This includes providing an organization so that a high-salaried person shall not be re-

quired or allowed to do work that can be done as well by a low-salaried clerk. Ex-Governor Smith [2] says:

> How long would any great corporation live if the man directing its affairs were compelled to spend 75 per cent of his time doing clerical work?

These same words are appropriate in considering the organization of a public school system. Administrative and supervisory organizations should provide not only for properly placing authority and responsibility for carrying on the work of the schools, but also for furnishing an adequate clerical staff. From the data available in the present study, we are not able to determine objectively the number of clerks there should be in a school system of a given size. Certainly the number should be large enough so that the higher salaried officers shall not be required to do very much clerical work.

Organization Charts

Charts 1 to 17, inclusive, represent the administrative and supervisory organizations of city school systems in six states—California, Massachusetts, North Carolina, New Jersey, New York, and Texas. These charts show types of organizations in cities ranging in population from 20,000 to 50,000. All except two of the charts represent existing organizations in the cities designated, for the year ending June 30, 1929. Charts 2 and 11 represent the organizations proposed for Perth Amboy, New Jersey,[3] and for Newburgh, New York,[4] respectively, in the 1929 reports of the school surveys conducted in those cities by The Institute of Educational Research, Division of Field Studies of Teachers College, Columbia University.

In the present study the importance of Charts 2 to 15 is that: (a) they represent types of organization; (b) they can be made to serve as patterns for administrative and supervisory organizations for cities of from 20,000 to 50,000 population, and easily modified to meet local conditions; (c) they represent sound organizations except in some definite particulars which will be pointed out later; (d) they will provide superintendents of

[2] Smith, A. E., "How We Ruin Our Governors," *National Municipal Review*, Vol. 10, pp. 277-80, 1921.

[3] Chart 2 is taken from the Perth Amboy, New Jersey, Survey, p. 8.

[4] Chart 11 is taken from the Newburgh, New York, Survey, p. 265.

schools and boards of education with bases of comparative study for improving local organizations.

A comparison of the present administrative and supervisory organization of Perth Amboy with the organization proposed for that city shows clearly and definitely the improvement which can be made in the organization of a city school system. Chart 3 represents an organization which is unsound in several respects. The school system is fiscally dependent. It is a multiple type organization, the superintendent being one of three executive officers, each of whom is independently responsible to the board of education. Through the committee system the board of education performs executive functions.

The organization proposed for Perth Amboy and represented in Chart 2 conforms to sound principles of public administration in all respects except one. The librarians are directly responsible to someone other than the principals of the schools in which they work.

Chart 4 represents the administrative and supervisory organization of the schools of Greensboro, North Carolina. This organization conforms to sound principles of public school administration in regard to authority, responsibility, and relationships. The supervisory staff and the clerical staff are inadequate. There is no supervisor of household arts, nor of manual or industrial arts. There is no supervisor of special classes, and there is no director of research. A city school system organization, as progressive and forward-looking in other respects as the Greensboro system is, should have supervisors for these departments.

Chart 5 represents the administrative and supervisory organization of the schools of Santa Monica, California. The school system is fiscally dependent. Except for this particular, the organization is very good. The organization conforms to sound principles of public school administration in regard to authority, responsibility, and relationships of line and staff from the board of education down. Departments are properly placed, and there is an adequate clerical staff in number of clerks.

Chart 6 represents the administrative and supervisory organization of the schools of New Brunswick, New Jersey. This is a fiscally dependent school system, and there is a secretary to the board of education. The supervision of physical education is

not a part of the health work of the schools. Except for these faults the organization is sound. The observer will note the absence of a supervisor of special classes and a director of research, each of whom would be a desirable addition to the staff.

Chart 7 represents the administrative and supervisory organization of the Poughkeepsie, New York, school system. The system is fiscally dependent. Physical education is not under the supervision of the department of school health. Except for these defects the organization is a desirable one.

Chart 8 represents the administrative and supervisory organization of the schools of Revere, Massachusetts. The school system is fiscally dependent. There is no one individual who is responsible for the health service, and physical education is not a part of the health organization of the school system. Except for these faults the organization is sound and desirable.

Chart 9 represents the supervisory and administrative organization of Montclair, New Jersey. This is a very desirable organization, and can be used as a model for what is most desirable and entirely sound. Montclair's comparatively high amount of taxable wealth makes it relatively easy for that city to have an organization which is sound and which meets all of the educational needs of the city.

Chart 10 represents the organization of the schools of Newburgh, New York, as the organization existed in 1928, and Chart 11 represents the proposed organization. A comparison of the two charts is sufficient to disclose the superiority of the proposed organization.

Chart 12 represents the administrative and supervisory organization of Port Arthur, Texas, as recommended by the Division of Field Studies of Teachers College, Columbia University, in a survey of the Port Arthur schools in 1926. Defects of this organization are the absence of supervisors of art, music, household arts, and manual or industrial arts.

Chart 13 is a representation of the organization of the schools of White Plains, New York. The school system is fiscally dependent. Physical education is not a part of the school health service. Except for these defects the organization is a good one.

Chart 14 represents the administrative and supervisory organization of the schools of West Orange, New Jersey. The

position of secretary of the board of education is coordinate with that of the superintendent of schools. Physical education is not under the direction of the school health department, and the director of health is a part-time official.

Chart 15 is a representation of the administrative and supervisory organization of the schools of Arlington, Massachusetts. The school system is fiscally dependent and the physical education is not a part of the school health organization. Except for these faults the organization is a good one.

Charts 16 and 17 represent the organizations of the high schools of Revere, Massachusetts, and Montclair, New Jersey, respectively.

The Revere organization chart shows definitely and clearly the line and staff relationships for administration and supervision. This organization is unique in that it shows that the relationships of the directors or supervisors of special subjects are those of representatives of the superintendent of schools. In some instances, for the purpose of carrying out particular assignments, these directors are considered *representative officers* rather than staff officers. As a whole, the organization is good.

In the Montclair organization, the chart shows provision for educational guidance in small divisions so that there is opportunity for attention to individual needs. There is no indication that any one individual is responsible for the guidance program. The chart organization line of administrative and supervisory authority and responsibility represents a faulty relationship. The deans are represented as line officers. In practice they are staff officers so far as their relationship to line and staff officers of the organization is concerned. In the organization, however, they are designated line officers. In this particular this is an example of a case in which the administration is better than the organization.

Summary and Conclusions

1. Since several different factors determine the administrative and supervisory organizations of city school systems and these factors vary in number and in strength among the cities, we cannot conclude that a particular, detailed chart will represent an organization suitable for several cities of the same size.

2. Certain definite principles of organization apply to proper

organization for all city school systems, and these principles are the principles of relationships.

3. Many school system organizations have been formed without the application of these principles.

4. Charts 2 to 15, inclusive, will serve as patterns for organizations in any city of 20,000 to 50,000 population, and will serve as bases of comparison for the purpose of improving local city school system organizations.

5. Not standardization, but soundness of organization, should result from the use of these organization charts as patterns.

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VITA

William C. McGinnis was born in Groton, Vermont, November 16, 1884. He graduated from Lamoille Central Academy, Hyde Park, Vermont, in 1902; from Bordentown, New Jersey, Military Institute in 1903. He received his B.S. degree from the University of Vermont, in 1907; and his A.M. degree from Teachers College, Columbia University, in 1929. He was a student at Harvard University Graduate School of Education, Summer School, 1920, 1922, and 1923.

He taught in the schools of Vermont, 1907-1909; was superintendent of Kurn Hattin School for Boys, Westminster, Vermont, 1909-1910; was superintendent of public schools, North Troy, Vermont, 1910-1916; superintendent, Bellows Falls, Vermont, 1916-1920; superintendent, Revere, Massachusetts, 1920-1928. He was a member of the Vermont State Board of Education, 1912-1913; and a graduate student of Teachers College, Columbia University, 1928-1929.

He was Director, Massachusetts Teachers Federation, 1922-1928; Director, Revere Savings Bank, 1926-1928; Director, Revere Chamber of Commerce, 1922-1928.

He is author of Hammett's *Plan Books*, J. L. Hammett Co., Cambridge, Massachusetts, 1916, and joint author of the revised edition of the same, 1928; joint author of *The Massachusetts Junior High School Manual*, 1922, and of the *Custodial Care of School Buildings*, Massachusetts Department of Education, 1925. He is writer of articles on educational administration and supervision in several periodicals, including *The American School Board Journal, Educational Review, School and Society, Educational Digest*, and *The Journal of Education*. He is the author of "Problems of Administration and Supervision," *Fourth Year Book*, Department of Superintendence, National Education Association, 1927.